

2014-1812

**United States Court of Appeals
for the Federal Circuit**

REMBRANDT SOCIAL MEDIA, LP,

Plaintiff-Appellant,

- v -

FACEBOOK, INC.,

Defendant-Appellee.

Appeal from the United States District Court for the Eastern District of Virginia
in Case No. 13-CV-00158, Judge T.S. Ellis III.

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CERTIFICATE OF INTEREST

Pursuant to Federal Circuit Rule 47.4, counsel of record for Plaintiff-Appellant Rembrandt Social Media, LP certify as follows:

- (1) The full name of every party or amicus represented by us is:

Rembrandt Social Media, LP
- (2) The name of the real party in interest represented by us is:

Rembrandt Social Media, LP
- (3) All parent corporations and any publicly held companies that own 10 percent or more of the stock of the party represented by us are:

None.
- (4) The names of all law firms and the partners or associates that appeared for the party or amicus now represented by us in the trial court or agency or are expected to appear in this court are:

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TABLE OF CONTENTS

	<u>Page</u>
CERTIFICATE OF INTEREST	i
TABLE OF AUTHORITIES	v
STATEMENT OF RELATED CASES	1
JURISDICTIONAL STATEMENT	1
STATEMENT OF THE ISSUES.....	1
INTRODUCTORY STATEMENT	3
STATEMENT OF THE CASE AND FACTS	7
A. The Invention	7
B. Facebook’s Assembly of Diary Pages Using BigPipe	13
C. Facebook’s Database.....	14
D. The District Court Proceedings	15
1. Claim Construction	15
2. Pre-Trial Rulings.....	16
3. The Trial.....	18
4. Verdict and Post Trial	22
SUMMARY OF THE ARGUMENT	22
ARGUMENT	25
I. STANDARD OF REVIEW.....	25

TABLE OF CONTENTS (cont'd)

	<u>Page</u>
II. THE DISTRICT COURT’S DENIAL OF JUDGMENT AS A MATTER OF LAW SHOULD BE REVERSED	25
A. Legal Standards	25
B. The District Court’s Judgment that Facebook Does Not Infringe the ’316 Patent Should Be Reversed	26
1. The ’316 Claims Require a Page Definition from the Applet, But Not a Displayed Page	27
2. Facebook’s BigPipe Applet is a Diary Program that Combines Content and Page Design to Form a Cohesive Diary Page, As Claimed	29
3. The District Court Relied on a Non-Existent “Fact Question” to Deny JMOL	31
C. The Judgment that Facebook Does Not Infringe the ’362 Patent Should Be Reversed	32
D. The Judgment that the ’316 and ’362 Patents Are Invalid Should Be Reversed	35
1. Renshaw Lacks an Applet that Generates a Page Definition ...	35
2. The Rasansky/Wang Combination Does Not Render the ’316 Claims Obvious	37
III. THE DISTRICT COURT ABUSED ITS DISCRETION IN EXCLUDING PORTIONS OF DR. GOLBECK’S REPORT RELATING TO PRIVACY LEVEL INFORMATION	40

TABLE OF CONTENTS (cont'd)

	<u>Page</u>
IV. THE DISTRICT COURT’S IMPROPER AND PREJUDICIAL QUESTIONING OF FACEBOOK’S LAY WITNESS REQUIRES A NEW TRIAL.....	43
A. Legal Standard.....	43
B. The District Court’s Improper Questioning Denied Rembrandt the Right to An Impartial Trial.....	44
V. DAMAGES.....	49
A. Legal Standard.....	49
B. The District Court Abused Its Discretion in Excluding the Entire Expert Report of Rembrandt’s Damages Expert.....	49
1. The District Court Erred in Requiring Apportionment Down to Individual Claim Elements	50
2. The District Court Excluded Mr. Malackowski’s Use of Survey Data to Apportion the Base on the Incorrect Legal Standard	54
C. The District Court Abused Its Discretion in Refusing to Let Rembrandt Supplement with a BigPipe Damages Theory.....	57
CONCLUSION	61
CERTIFICATE OF SERVICE	64
CERTIFICATE OF COMPLIANCE.....	65

TABLE OF AUTHORITIES

	<u>Page(s)</u>
Cases	
<i>Anderson v. Sheppard</i> , 856 F.2d 741 (6th Cir. 1988)	21
<i>Anderson v. Westinghouse Savannah River Co.</i> , 406 F.3d 248 (4th Cir. 2005)	25
<i>Apple Inc. v. Motorola, Inc.</i> , 757 F.3d 1286 (Fed. Cir. 2014)	passim
<i>Broadcom Corp. v. Emulex Corp.</i> , 732 F.3d 1325 (Fed. Cir. 2013)	26, 32
<i>Caterpillar Inc. v. Deere & Co.</i> , 224 F.3d 1374 (Fed. Cir. 2000)	35
<i>Cornell Univ. v. Hewlett-Packard Co.</i> , 609 F. Supp. 2d 279 (N.D.N.Y. 2009)	57
<i>Crandell v. United States</i> , 703 F.2d 74 (4th Cir. 1983)	43, 48
<i>Dow Chem. Co. v. Mee Indus., Inc.</i> , 341 F.3d 1370 (Fed. Cir. 2003)	61
<i>Dynetex Design Solutions, Inc. v. Synopsys, Inc.</i> , No. C 11-05973 PSG, 2013 WL 4538210 (N.D. Cal. Aug. 22, 2013)	57
<i>DyStar Textilfarben GmbH & Co. Deutschland KG v. C.H. Patrick Co.</i> , 464 F.3d 1356 (Fed. Cir. 2006)	25
<i>ePlus, Inc. v. Lawson Software, Inc.</i> , 700 F.3d 509 (Fed. Cir. 2012)	59

TABLE OF AUTHORITIES (cont'd)

	<u>Page(s)</u>
<i>i4i Ltd. P'ship v. Microsoft Corp.</i> , 598 F.3d 831 (Fed. Cir. 2010), <i>aff'd</i> , 131 S. Ct. 2238 (2011).....	55, 57
<i>InTouch Tech., Inc. v. VGO Communications, Inc.</i> , 751 F.3d 1327 (Fed. Cir. 2014)	40
<i>KSR Int'l Co. v. Teleflex Inc.</i> , 550 U.S. 398 (2007)	40
<i>LaserDynamics, Inc. v. Quanta Computer, Inc.</i> , 694 F.3d 51 (Fed. Cir. 2012)	7, 56
<i>Liteky v. United States</i> , 510 U.S. 540 (1994)	48
<i>Lucent Techs., Inc. v. Microsoft Corp.</i> , No. 07-CV-2000, 2011 WL 2728317 (S.D. Cal. July 13, 2011).....	55, 57
<i>Maheu v. Hughes Tool Co.</i> , 569 F.2d 459 (9th Cir. 1977)	45
<i>Moba, B.V. v. Diamond Automation, Inc.</i> , 325 F.3d 1306 (Fed. Cir. 2003)	26, 31, 32
<i>Nationwide Mut. Fire Ins. Co. v. Ford Motor Co.</i> , 174 F.3d 801 (6th Cir. 1999)	48
<i>Nellcor Puritan Bennett, Inc. v. Masimo Corp.</i> , 402 F.3d 1364 (Fed. Cir. 2005)	29
<i>Pollard v. Fennell</i> , 400 F.2d 421 (4th Cir. 1968)	43, 45, 46, 47
<i>Rembrandt Soc. Media, LP v. Facebook, Inc.</i> , 561 F. App'x 509 (Fed. Cir. 2014)	58, 59
<i>Revolution Eyewear, Inc. v. Aspex Eyewear, Inc.</i> , 563 F.3d 1358 (Fed. Cir. 2009)	43

TABLE OF AUTHORITIES (cont'd)

	<u>Page(s)</u>
<i>Riverwood Int’l Corp. v. R.A. Jones & Co., Inc.</i> , 324 F.3d 1346 (Fed. Cir. 2003)	25
<i>Sit-Set, A.G. v. Universal Jet Exch., Inc.</i> , 747 F.2d 921 (4th Cir. 1984)	43, 45, 47
<i>Standard Havens Prods., Inc. v. Gencor Indus., Inc.</i> , 953 F.2d 1360 (Fed. Cir. 1991)	55
<i>Uniloc USA, Inc. v. Microsoft Corp.</i> , 632 F.3d 1292 (Fed. Cir. 2011)	50
<i>United States v. Barnhart</i> , 599 F.3d 737 (7th Cir. 2010)	43
<i>United States v. Karnes</i> , 531 F.2d 214 (4th Cir. 1976)	43
<i>United States v. Parodi</i> , 703 F.2d 768 (4th Cir. 1983)	44, 47
<i>United States v. Perry</i> , 335 F.3d 316 (4th Cir. 2003)	25
<i>United States v. Wolfe</i> , 1994 WL 118111, 23 F.3d 404 (4th Cir. 1994) (unpublished)	46
<i>Univ. of Pittsburg v. Varian Med. Sys.</i> , No. 2012-1575, 2014 WL 1387144 (Fed. Cir. Apr. 10, 2014)	52
<i>Virnetx, Inc. v. Cisco Sys., Inc.</i> , 767 F.3d 1308 (Fed. Cir. 2014)	50, 55
<i>Voda v. Cordis Corp.</i> , 536 F.3d 1311 (Fed. Cir. 2008)	33
<i>In re Wildewood Litig.</i> , 52 F.3d 499 (4th Cir. 1995)	25

TABLE OF AUTHORITIES (cont'd)

	<u>Page(s)</u>
<i>ZF Meritor, LLC v. Eaton Corp.</i> , 696 F.3d 254 (3d Cir. 2012)	58
<i>Zygo Corp. v. Wyko Corp.</i> , 79 F.3d 1563 (Fed. Cir. 1996)	54
 Statutes	
28 U.S.C. § 1295(a)(1)	1
28 U.S.C. § 1331	1
28 U.S.C. § 1338(a)	1
35 U.S.C. § 284	50, 57

STATEMENT OF RELATED CASES

Rembrandt filed an unopposed petition for interlocutory appeal of the district court's *Daubert* Order in this case on December 17, 2013 (No. 2014-111), which was denied April 7, 2014. No other appeal in or from the same civil action or proceeding in the lower court was previously before this or any other appellate court, nor is there any other civil action known to counsel involving the same parties.

On July 7, 2014, the USPTO instituted Inter Partes Review (IPR2014-00415) of U.S. Patent 6,415,316, one of the two patents-in-suit, on the petition of Appellee Facebook. The patent owner's response was filed October 14, 2014, Facebook's reply was filed January 20, 2015, and a final decision is expected by July 7, 2015.

JURISDICTIONAL STATEMENT

The district court had jurisdiction under 28 U.S.C. §§ 1331 and 1338(a). The district court entered a final judgment after a jury verdict in favor of Facebook. [A2] This Court has jurisdiction under 28 U.S.C. § 1295(a)(1).

STATEMENT OF THE ISSUES

1. Whether the following rulings were premised fundamentally on adding limitations to, or subtracting limitations from, the court's claim constructions:

- **'316 infringement:** Whether the verdict lacked substantial evidence, where Facebook argued that the accused Facebook applet does not "assemble" a "diary page" because the web browser retrieves external content when rendering the page, and where the court's claim construction permitted such actions by the web browser, and the browser in the asserted patents performed such actions?

- **Invalidity:** Whether the invalidity judgments for both asserted patents lacked substantial evidence where Facebook and the district court removed requirements from the claims to make the prior art read on the claims?
- **Exclusion of Validity Testimony:** Whether the district court improperly read the term “level” out of “privacy level information” when excluding Rembrandt’s validity testimony for allegedly adding such a feature to the claims?

2. **’362 infringement:** Whether the verdict lacked substantial evidence where Facebook (a) made the same flawed distinction as above for the term “generating a page definition,” and (b) the only evidence on the doctrine of equivalents came from Rembrandt’s expert who explained without contradiction how the claimed “AUA database” and Facebook’s database were insubstantially different, and the district court improperly focused on mere portions of the relevant limitation?

3. **New Trial:** Whether Rembrandt is entitled to a new trial where the district court asked a Facebook witness leading questions in a manner that made clear to the jury the court’s negative view of the merits of Rembrandt’s case?

4. **Damages:** Whether the district court:

- Applied the wrong substantive law in requiring Rembrandt’s damages expert report to apportion the royalty base down to features that were mere sub-sets of each patent claim, and to show the survey results relied on were “exactly equal” or “directly correlate[d]” to revenue attributable to the patented features?
- Abused its discretion in categorically refusing to accept a revised damages report that accounted for the court’s *Daubert* decision?

INTRODUCTORY STATEMENT

This is an appeal from the district court's denial of JMOL and new trial on infringement and validity, its exclusion of part of Rembrandt's expert testimony on validity, and its complete exclusion of Rembrandt's damages case. The two patents-in-suit deal with a web browser-based "diary" system by which users can share entries with their friends and others, developed in the late 1990s by Dutch inventor Jos Van der Meer. Years later, Mark Zuckerberg developed in his Harvard dorm a similar product that is now known throughout the world as Facebook.

In prior art systems, the server typically generated the complete "page definition" that instructs the user's browser exactly how to display the webpage. The patented invention and Facebook instead generate the page definition on the fly at the user's computer. Both serve (1) a template that contains the basic layout of the page, and (2) a program or "applet" that runs within the browser to assemble a complete page definition by filling in the template with content that is separately served. Facebook's page-definition-assembling program is called "BigPipe" because it sends large amounts of data through the "pipes" of the Internet, but with faster response times by having users' computers, rather than Facebook's servers, assemble the page definition.

The central liability issue centers on whether the "page definition" generated by the "diary program" or "applet" must include everything the browser ultimately

displays, or may instead include uniform resource locators (URLs) (e.g., “www.example.com/image123.jpg”) that identify page elements (such as images) and formatting information that the web browser pulls in when displaying the page. The ’362 specification shows that the diary program/applet does “assemble” a “page definition” even if the browser uses “universal addresses” in the page definition to retrieve other data, describing that “the browser . . . generate[s] web pages based on the page definitions (which includes *downloading the objects identified by the universal addresses in the page definitions*).”

Rembrandt’s expert Dr. Golbeck explained to the jury how the district court’s claim construction merely required a “page definition” that defines a page, but does not have to be the actual displayed page itself, and how the patents confirmed as much. She admitted nothing contrary on cross-examination. Her testimony was unrefuted because Facebook never put on an infringement expert, and Facebook’s fact witnesses agreed with Dr. Golbeck regarding how BigPipe worked as a technical matter. Dr. Golbeck also explained that the asserted prior art simply used applets to render a page, like a browser would, and did not disclose applets that generated a page definition.

Why then did the jury rule against Rembrandt, despite a set of undisputed facts supporting infringement and validity? The answer: improper intervention on Facebook’s side by the district court. The Court made clear to the jury that it sided with

Facebook on the central issue in dispute—whether BigPipe “assembled a cohesive diary page,” a claim term which had been construed to require only assembly of the page definition. Specifically, the court interrupted Rembrandt’s cross-examination of Facebook engineer Stefan Parker, a lay witness with no knowledge of the patents or the court’s claim construction, to ask leading questions asking him to confirm that the browser “assembled” the web pages for Facebook (and thus that BigPipe did not). The court moved forward with a cascade of leading questions, all using the claim term “assemble” to describe the role of the browser, culminating in the following exchange that announced the court’s view that BigPipe did not “assemble” the page:

THE COURT: Would it be fair then to say that the browser assembles a cohesive diary page but BigPipe sends to the browser instructions on how to do it.

THE WITNESS: Yes.

* * *

THE COURT: Is that what you referred to when you answered my question that the browser gets instructions on how to assemble the diary page, the cohesive diary page from BigPipe, but it’s the browser that assembles it.

THE WITNESS: Yes.

THE COURT: All right. Let’s not belabor it any more than that, unless that question and answer misses a point.

In addition to plainly suggesting to the jury how the court viewed the facts and that the jury could not have missed that point, this exchange was also misleading because Mr. Parker believed, not knowing the context of the patents and the claim construction, that the browser’s rendering of an already defined page constituted “assembly.”

But to the jury, trusting the relevance of the district court's questioning, the court's questions and Mr. Parker's answers appeared to directly contradict Rembrandt's infringement case. The court had made Facebook's case in the eyes of the jury, and Facebook knew it, so it never called its non-infringement expert.

The district court's intervention also drove the validity result. The prior art on which Facebook relied performed browser-like page rendering, but had no page-definition-assembling program that fed the browser. Facebook's invalidity expert Mr. Klausner even candidly admitted for one central prior art reference: "Renshaw describes the applet as effectively a browser," as if that was the "assembling" role required of the diary applet. He never pointed to any prior art teaching of an applet that combined content and page design to generate a page definition, which the claims actually require.

The district court further impeded Rembrandt's validity case by improperly striking the testimony of Rembrandt's validity expert, who opined that the prior art did not have the claimed "privacy level[s]" because it did not define the group of users who may see a particular piece of content. In striking this opinion, the district court ignored the plain meaning of its own claim construction and effectively read "level" out of the claim.

The damages appeal has both substantive and procedural aspects. Substantively, the district court erred by requiring apportionment of the royalty base down to features (BigPipe and Facebook's privacy settings) that were subsets of the claims

and did not themselves infringe the claims—an approach that reaches well beyond any of this Court’s damages cases, such as *LaserDynamics* or *VirnetX*, and is inconsistent with this Court’s decision in *Apple v. Motorola*, which held that it is legally erroneous for the district court to focus on “individual claim limitations in isolation” in evaluating a damages theory. The district court also applied the wrong legal standard when it required Rembrandt’s expert to show that the survey results he relied on for apportionment were “exactly equal” or “directly correlate[d]” to revenue attributable to the patented features, despite the well-established law that such precision is not required.

Procedurally, the district court erred by refusing to accept Rembrandt’s updated damages report, proffered to address the court’s view of the law—adopting an improper “per se” rule against second chances, which the court explained in various ways such as “[l]ife is full of making choices and living with the consequences”—and completely ignoring that the new theory was based on a document that Facebook failed to disclose and that Facebook had ample time to analyze and rebut Rembrandt’s revised theories.

STATEMENT OF THE CASE AND FACTS

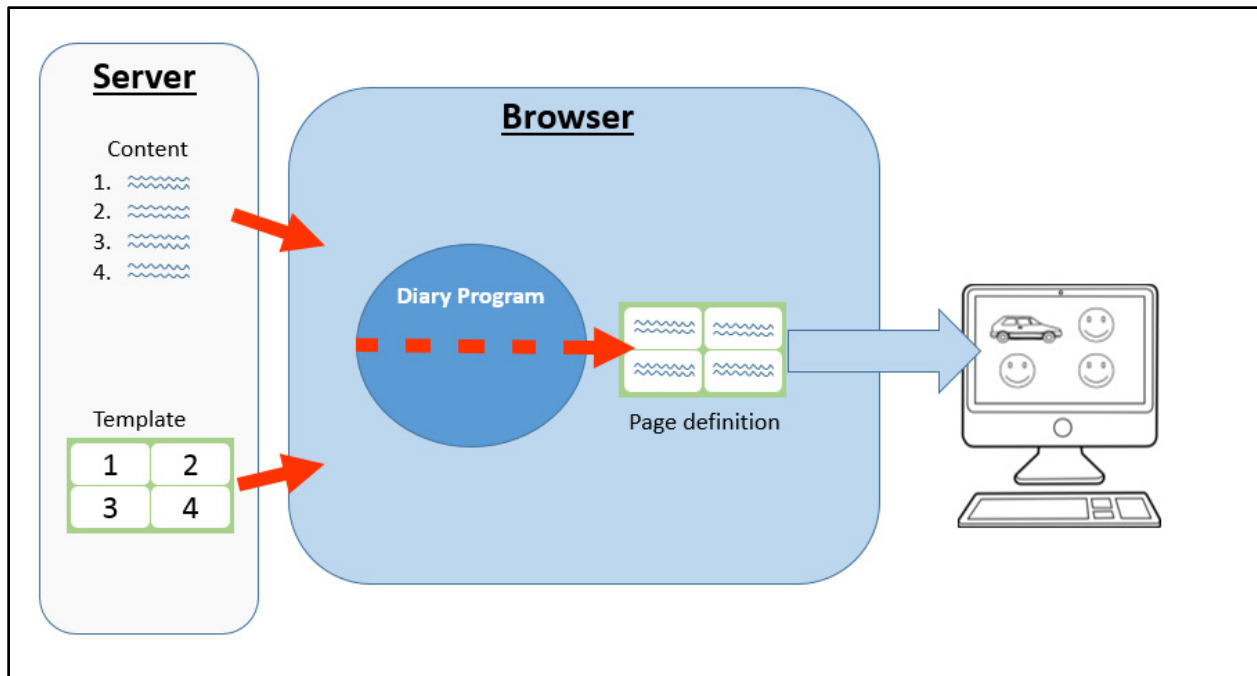
A. The Invention

The patents-in-suit concern an invention that lets users without special skills create, maintain, and share an online personal “diary.” [A75 (U.S. Patent 6,415,316); A114 (U.S. Patent 6,289,362)] Inventor Jos van der Meer hoped to solve

what he saw as a major problem in 1998—“the facelessness of the Internet,” which existed because “[n]on-technical users of the Internet f[ound] it difficult to present themselves.” [A99]

The patented invention overcame this problem with a comprehensive web-based diary system in which lay users are able to use pre-defined layouts for their diary pages and then create personalized diary entries by uploading content (such as text or images) and associating this content with a particular date. [A110] The invention also allows users to update their diary entries and set privacy levels to control who may view each diary entry. [*Id.*] The patents anticipated funding the disclosed web-based diary system through the use of advertising. [A111]

The dispute between the parties focused on one aspect of the invention, the “diary program” or “applet” that is sent from the system’s server and runs in the user’s web browser. That program populates a pre-defined “template”—which describes the general layout of the page—with the diary content, thereby generating a “page definition,” which is then displayed as a visible page by the browser, a process shown schematically here:



The invention's use of a template-filling diary applet in the user's web browser to generate a page definition was one of the patents' advances over the prior art. Traditional systems would simply send an already assembled page definition directly from the website to the browser. [See A10730; A10761]

While the patents change how a page definition is assembled, they do not change how page definitions are used by browsers rendering a page. (The invention had to work, after all, with existing browsers like Internet Explorer.)¹ Browsers read the code in the page definition and use that information to display the page exactly as specified (a process known as "parsing" and "rendering"). [A10673; A10748;

¹ See A102 ("The browser can be a standard Web browser, such as Navigator, available from Netscape Corp. and Explorer, available from Microsoft Corp. and does not need to be modified to allow a user to view an existing diary.").

A10764; A10766] Importantly, part of the process of a browser rendering a page has always involved the browser interpreting uniform resource locators (URLs) in the page definition that point the browser to externally stored information about the content of the page or the style of the page. [See A10762] For example, the page definition may include an element like “http://www.photo.com/landscape.jpg” that points to a JPEG image managed by the photo.com web site. When the browser sees that element while rendering the page, it fetches the actual JPEG file and displays it on the computer screen. [See A10769-70]

The patents-in-suit explicitly recognize that the browser uses URLs in just this way. The ’316 patent explains that the browser displays the page according to the diary applet-generated page definition, which is represented as code using the HyperText Markup Language (HTML):

[D]iary applet 112 generates one or more pages of the diary in HTML in accordance with the cover [i.e., page design], content, and configuration information. The HTML is displayed as a diary page by browser 110.

[A103].²

Similarly, the ’362 patent describes the applet creating a page definition that incorporates external information (e.g., photos) identified by URLs, which the browser follows to retrieve the information and display the page:

² See also A105 (“The HTML for a diary page is actually displayed by browser 110[.]”).

[T]he section manager 405 [the “applet”] in step 1165 generate[s] page definitions for the section based on the template 150, the ***universal addresses (URLs)*** and the annotations (i.e., the results of the examination performed by the modules 407). Step 1165 further includes the step of instructing the browser 142, 158 to ***generate web pages based on the page definitions (which includes downloading the objects identified by the universal addresses in the page definitions)***.³

Facebook’s central non-infringement defense was that its applet, BigPipe, did not generate a “page definition” because BigPipe’s output includes URLs identifying page elements, and the browser had to retrieve some of this information when rendering the page. But as the passages above make plain, the invention works the same way—with the applet passing URLs as part of the page definition.

The four asserted claims are broadly directed to the web-based diary system described in the patents, including this process of assembling a diary page from multiple parts.⁴ Claim 4 of the ’316 patent (below) is representative, and recites steps taken by the server, and by the “diary program” sent to the user’s computer:⁵

4. A method of organizing information for display, comprising:

sending from a diary server to a user system, a diary program capable of being executed by a browser in the user system;

³ A135-36 (emphasis added). The ’362 patent is incorporated by reference into the ’316 patent.

⁴ The asserted claims are claims 4, 20, and 26 of the ’316 patent and claim 8 of the ’362 patent.

⁵ Claim 4 is a dependent claim to claim 1. The representation here is a combination of claim 1 and claim 4.

sending diary information from the diary server to the user system, the information comprising content data including an associated time, a page design to specify the presentation of the content data, and configuration information for controlling behavior of a cohesive diary page, the configuration information including privacy level information;

assembling the cohesive diary page by dynamically combining the content data and the page design in accordance with the configuration information for the cohesive diary page to be displayed by the diary program running in the browser;

receiving by the diary server at least one request for at least one change concerning the diary information, from the diary program in the user system; and

sending, by the diary server to the user system, new diary information for changing the cohesive diary page.

wherein the new diary information is for changing content of the diary page without changing a general appearance of the diary page.⁶

[A110]

Claim 8 of the '362 patent is similar. It includes an applet that “dynamically generates a page definition” from the page design (referred to as the “presentation context”) and a particular type of content called an “annotated universal address” (AUA), which the server stores in a database. [A141] The AUA contains a URL

⁶ Claim 26 is substantially the same as claim 4 but is an apparatus claim. Claim 20 includes a requirement that the diary page include “advertisements, not requested by a user.” Facebook did not provide any additional non-infringement or invalidity arguments for either claim.

that links to particular content and “annotation” information that includes privacy levels delineating who can see that content. [A131-32]

B. Facebook’s Assembly of Diary Pages Using BigPipe

Facebook works by allowing users to post diary entries, or “Stories,” which other users can view. [A10689-90] A user’s Stories appear on a personal diary page called “Timeline,” and on a page called the “News Feed” that shows Stories from multiple friends together. [A10682-83] As in the asserted patents, Facebook users can set privacy levels for each Story to limit who may see it. [*Id.*] Facebook displays the privacy levels with the Stories using what the parties have called “Audience Symbol” icons.

Facebook switched from the traditional “whole-page-at-once” serving technique to using the BigPipe applet in 2009. [A10762] With BigPipe, upon receiving a user’s request to view a page, Facebook serves the BigPipe applet and a template that defines a page’s logical structure. [See A10461; A10684; A10686-88; A10729] It then serves a series of “pagelets”—pieces of HTML page content—while the BigPipe applet (running in the browser) inserts the pagelets into respective slots in the template (called “DIVs”). [A10459-462; A10690-91; A10705-06; A10748-749]

The final result is an integrated HTML document that completely defines the appearance of the page. [A10690]⁷ Facebook described BigPipe as its “secret weapon,” explaining that using BigPipe “dramatically improve[d]” how fast its web pages appear to come on the screen (a property known as latency), which is of “critical” importance to users and Facebook. [A10459; A10462; A10776]

Just as the patents moved the page assembly process to the user’s computer but did not change the format of the data given to the browser, so too did BigPipe. (Facebook was not going to make Microsoft, Apple, or Google change their browsers.) The job of rendering the assembled HTML document into a visible page remained where it had always been, with the browser itself—and that job continued to include accessing external data defined in the page definition, such as images and Cascading Style Sheet (CSS) resources. [See A10765; A10767; A10769]⁸

C. Facebook’s Database

The ’362 claim allows users to associate the URLs for particular diary entries (called “universal addresses”) with privacy levels (called “annotations”) to create

⁷ See also A10770 (Facebook engineer stating that this HTML document contains “[a]ll of the external resources that the browser needs to build the page.”); A10774.

⁸ As Facebook engineer Mr. Parker explained, CSS resources contain formatting instructions for the browser, such as what color the text should be. [A10760] Using links to CSS resources instead of putting those instructions directly into the HTML text “let[s] you write instructions once, and then the browser can apply them multiple times.” [*Id.*]

what the claim calls “annotated universal addresses” or AUAs. [A131] These AUAs are stored in an “AUA database” for use in generating diary pages. [*Id.*] Facebook has an equivalent database system, which provides a privacy level and a URL (called a “permalink”) for every Facebook story. [A10702] To save space, however, the Facebook database does not store the full permalink, but instead stores a “shorthand code that can be turned into a URL” by adding standard boilerplate. [A10703] The example permalink below shows boilerplate in red and the shorthand code in green:

<https://www.facebook.com/jeremey.doe.56211/posts/25412080126509>

[A10703-04] All of the evidence at trial showed that there was no substantial difference between this approach and storing the entire URL in a database. [*Id.*]

D. The District Court Proceedings

1. Claim Construction

The district court’s claim constructions, as most relevant to this appeal, confirm that the role of the diary program or “applet” in both the ’316 patent and ’362 patent is to generate a page definition that contains all the information the browser needs to display the page. For the ’362 patent, the claims expressly require that the applet “dynamically generate a page definition.” [A140] The district court adopted the parties’ stipulated construction that “page definition” was “information that completely defines the appearance of a page.” For the ’316 patent, the claims require

that the “diary program” “assembl[e] the cohesive diary page by dynamically combining the content data and the page design.” [A110] The district court construed this limitation as “forming the cohesive diary page to be displayed by combining, at the time of display, the content data with the page design, to generate *a page definition*.” [A148, emphasis added] The same construction of “page definition” as in the ‘362 patent applied. The district court also adopted the parties’ stipulation that “cohesive diary page” meant a “diary page in which the content data and the page design are fully integrated for display.” [A145]⁹

2. Pre-Trial Rulings

The district court used a series of pre-trial rulings to preclude Rembrandt’s entire damages case and a portion of its invalidity case.

Rembrandt asserted a reasonable royalty based on revenue Facebook received from using the claimed inventions. To ensure that the damages base did not encompass revenue attributable to non-infringing features, Rembrandt’s damages expert, James Malackowski, used three consumer and advertiser surveys to apportion the revenue. These surveys quantified the relative importance of Facebook pages built by the patented method, as compared to non-infringing Facebook features. [A13414-427] Having apportioned the base to the smallest patent-practicing unit,

⁹ The full list of the district court’s constructions is at A145-148.

Mr. Malackowski then used the *Georgia-Pacific* factors (including prior licenses of software embodying the patented technology) to select a rate and compute damages. [A13447-470]

Days before trial was set to begin, the district court granted Facebook's *Daubert* motion to preclude Mr. Malackowski's testimony, concluding that he had "failed to apportion Facebook's revenue to BigPipe and to Audience Symbol." [A66] The court so ruled even though BigPipe and Audience Symbol corresponded to mere elements of the asserted claims, and were not themselves infringing. On the same day the court struck a portion of Rembrandt's invalidity expert's report relating to the "privacy level" limitations. [A32-36]

The court subsequently refused to let Rembrandt submit a modified damages report. It did, however, agree to stay the case and certify the damages *Daubert* issue, concluding that it was "a 'controlling question of law as to which there is substantial ground for difference of opinion'" [A12664] Although this Court ultimately refused to hear the interlocutory appeal, it suggested that "the choice of a § 1292(b) certification, accompanied by postponement of trial, would seem to undermine the stated premise of the refusal to allow modification of the proposed damages presentation." [A27]

The district court nonetheless blocked all of Rembrandt's subsequent efforts to supplement the damages report to match the district court's legal views. [See,

e.g., A12-16; A17-18; A19-21; A37-54] It barred Rembrandt from even relying on a supplemental report that was based on a late-discovered Facebook presentation that quantified BigPipe’s value to Facebook—which Facebook had improperly failed to disclose during fact discovery. [A17-18]¹⁰ The district court also precluded Rembrandt from presenting any non-expert damages evidence to the jury. [A10618-19]

3. The Trial

The parties tried only infringement and invalidity, because of the damages rulings. For ’316 infringement, the sole dispute was whether BigPipe was a “diary program” that “assembled the cohesive diary page.” For the ’362 patent, the parties also disputed whether Facebook satisfied the AUA database limitation by the doctrine of equivalents. For invalidity, Facebook alleged that the Renshaw reference [A8228] anticipated the ’362 patent and that the combination of the Wang [A8211] and Rasansky [A8163] references made the ’316 patent obvious. In both cases, validity turned on whether the prior art taught a diary program or applet that assembled the page definition as required by the patents.

The pivotal moment of the trial came while Rembrandt cross-examined Facebook engineer and fact witness Mr. Parker. Although Mr. Parker had no familiarity

¹⁰ The presentation described experiments showing that increasing site speed as BigPipe does would substantially increase Facebook’s bottom line. [A4006-4013]

with the patents, the claims, or the court's claim constructions, [A10770; A10773] the district court intervened to ask Mr. Parker to opine on the issue at the crux of the parties' dispute—whether BigPipe assembles a cohesive diary page. [A10769-771; A10773] In a highly unusual series of leading questions, the district court effectively testified through Mr. Parker that BigPipe did not assemble the cohesive diary page, and thus Facebook did not infringe:

THE COURT: Well, does BigPipe assemble a cohesive diary page?

THE WITNESS: No. [A10769]

* * *

THE COURT: Would it be fair then to say that the browser assembles a cohesive diary page but BigPipe sends to the browser instructions on how to do it.

THE WITNESS: Yes. [A10769]

* * *

THE COURT: Is that what you referred to when you answered my question that the browser gets instructions on how to assemble the diary page, the cohesive diary page from BigPipe, but it's the browser that assembles it.

THE WITNESS: Yes.

THE COURT: All right. Let's not belabor it any more than that, unless that question and answer misses a point. [A10770]

When counsel for Rembrandt tried to follow up to confirm that Mr. Parker had not read the patents, and thus was not testifying about whether the HTML document generated by BigPipe met the court's definition of "page definition," the district

court sustained an objection, shut down further testimony, and told the jury that it was appropriate for Mr. Parker to testify about the patents' terms:

THE COURT: [directed to Counsel in front of the jury] Yes, I asked him a question, and he gave an answer, and it may well apply to the patent. You don't have any real control over that. He doesn't have to study the patent. I asked him specific questions focused on terms of the patent, and he gave an answer.

Next question.

ATTORNEY GOETZ: Your Honor, may we approach?

THE COURT: No. [A10770]

The court later refused Rembrandt's requests to strike the answers, for a curative instruction, and for a mistrial. [A10771; A7671-72; A10823] Facebook, meanwhile, decided it no longer needed testimony from its non-infringement expert, and removed him from its witness list. [A10786]

The trial court's intervention with Mr. Parker was exacerbated by numerous other interventions by the district court that biased the jury against Rembrandt. These interventions began with Rembrandt's opening statement, with the court interjecting four *sua sponte* objections. [A10627; A10628; A10629; A10632] The court then undertook on its own to undermine the credibility of each of Rembrandt's fact witnesses by interrogating them on their financial interest in the case. [A10648;

A10658-59]¹¹ The Court also repeatedly interrupted the examination of Rembrandt's expert Dr. Golbeck, at one point establishing the irrelevant fact that she did not know the names of the two men who invented the internet, or what university one of them attended. [A10674-75] These questions did not clarify her testimony, but only served to embarrass her and undermine her credibility.

Numerous other examples of interruptions that veered beyond clarification into advocacy appear in the record, with the district court interrupting Rembrandt *sua sponte* to object or ask question of witnesses¹² many times more frequently than it interrupted Facebook¹³—for example directing over 75 questions or comments at

¹¹ Among the district court's many questions: "Well do you also get any money?" [A10648] "Did you pay your own way over here?" [A10658] The Court also belittled the inventor's widow Hilde Bleeker when she was asked to describe generally what Sun Microsystems is, telling the jury "I doubt she is really competent to do that," [A10639] when in fact, as Ms. Bleeker subsequently testified, she had worked for years at Sun Microsystems. [A10640]

The bare record does not reflect the derisive and sarcastic tone with which many of the court's remarks were uttered. *See Anderson v. Sheppard*, 856 F.2d 741, 746 (6th Cir. 1988) ("[I]t is undisputable that a trial judge can communicate hostility and bias to a jury in ways that are not ascertainable from a reading of a 'cold' written record of the proceedings."). Nor does it reflect the dismissive tone in which the judge repeatedly said "Next question" when he criticized Rembrandt's counsel's questions. [See, e.g., A10644; A10647; A10671; A10675; A10677]

¹² See A10639; A10644-648; A10651-652; A10656; A10658-59; A10670-672; A10674-675; A10677; A10679; A10683; A10685; A10689; A10692-694; A10696; A10701; A10707; A10712; A10727-28; A10768-770; A10773-776; A10807-808; A10812; A10828-829; A10831; A10834-836.

¹³ A100714; A10719-721; A10723; A10760; A10800.

witnesses during Rembrandt's examinations versus 2 during Facebook's examinations. [A7869-71]

4. Verdict and Post Trial

After the jury found the patents non-infringed and invalid, Rembrandt moved for JMOL on all issues and for a new trial based on the district court's improper intervention. The district court denied all of the motions from the bench without written opinion. [A1; A12636-56]

SUMMARY OF THE ARGUMENT

'316 Infringement: Facebook's only dispute on infringement relied on adding limitations to the claims and to the claim construction. In particular, Facebook and the district court felt that BigPipe could not be a "diary program" that "assembles" a page definition because the browser still had to access additional data from the Internet—image files and certain formatting information—before a web page could be accurately displayed. But the "page definition" simply needs to define the page, and the patents are wholly contrary to Facebook's view because they show the browser fetching data using the page definition.

'362 Infringement: All evidence also indicated that Facebook's database was equivalent to the claimed AUA database—i.e., the only difference was that the former stores entire URLs while the latter stores unique portions of URLs, and adds boilerplate (e.g., "www.") when serving the code.

Invalidity: The same misunderstanding regarding the division of labor between the diary applet and browser that infected the infringement verdict also infected the jury's invalidity findings. For the '362 patent, Facebook argued that the "parsing and rendering" applet in Renshaw generated a "page definition," but Facebook's own expert admitted that it acts like a conventional browser, merely displaying a page already defined at the server. The Wang and Rasansky references, which Facebook argued to invalidate the '316 patent, also fail to teach an applet generating a page definition by combining content and page design information.

Striking Invalidity Testimony: The district court had no basis to strike the report of Rembrandt's technical expert relating to the claimed "privacy level information," where she indicated that the prior art only named users who could not see certain content, but did not show "level" information, or in the words of the court's claim construction, the art did not "describe[] or specif[y] which user(s) or categories of users are permitted to view particular content on a cohesive diary page," because none of the features Facebook pointed to defined the group of users who may see the page.

New Trial: The verdict resulted from improper and highly prejudicial interventions by the district court before the jury. A district court in the Fourth Circuit abuses its discretion to examine witnesses if, as here, its questions undermine the appearance of impartiality and signal to the jury how the judge believes the case

should be decided. The Fourth Circuit recognizes that leading questions like the district court asked here are the precise type of questions designed to let the listener know the answer the questioner wants and thus are particularly objectionable when posed by the court. Moreover, the court's questions here went to the crux of the dispute to let the jury know how the court felt about the merits, and the prejudice was exacerbated because Mr. Parker had no ability to answer questions about construed claim terms.

Damages: The district court first erred in its reading of the law on apportionment, ruling that apportionment must occur to a unit smaller than the patent practicing unit. The court also erred in reading the law to require survey results that are “exactly equal” or “directly correlate[d]” to revenue attributable to the patented features. The court abused its discretion by categorically refusing to accept a revised damages report, particularly because the law was uncertain and fast-changing through the entire process, and Rembrandt's supplemental report focusing on the value of BigPipe was based on centrally-relevant materials Facebook had failed to disclose.

ARGUMENT

I. STANDARD OF REVIEW

The Court applies regional circuit law to denials of JMOL or new trial.¹⁴ In the Fourth Circuit, the grant or denial of JMOL is reviewed *de novo*.¹⁵ The denial of a motion for a new trial is reviewed for abuse of discretion.¹⁶ Exclusion of an expert under *Daubert* is reviewed for abuse of discretion.¹⁷

II. THE DISTRICT COURT’S DENIAL OF JUDGMENT AS A MATTER OF LAW SHOULD BE REVERSED

A. Legal Standards

Rembrandt is entitled to JMOL unless there is a “legally sufficient evidentiary basis” for a reasonable jury to have found for Facebook.¹⁸ As the Fourth Circuit has explained, “the question is whether a jury, viewing the evidence in the light most favorable to [Facebook], could have properly reached the conclusion reached by this jury.”¹⁹

¹⁴ *Riverwood Int’l Corp. v. R.A. Jones & Co., Inc.*, 324 F.3d 1346, 1352 (Fed. Cir. 2003).

¹⁵ *DyStar Textilfarben GmbH & Co. Deutschland KG v. C.H. Patrick Co.*, 464 F.3d 1356, 1359 (Fed. Cir. 2006) (quoting *Johnson v. MBNA Am. Bank, NA*, 357 F.3d 426, 431 (4th Cir. 2004)).

¹⁶ *United States v. Perry*, 335 F.3d 316, 320 (4th Cir. 2003).

¹⁷ *Anderson v. Westinghouse Savannah River Co.*, 406 F.3d 248, 260 (4th Cir. 2005).

¹⁸ Fed. R. Civ. P. 50(a)(1).

¹⁹ *In re Wildewood Litig.*, 52 F.3d 499, 502 (4th Cir. 1995).

Courts can and do award JMOL that a patent has been infringed.²⁰ When non-infringement could only have been found based on an “incorrect notion” of what the claims require or on additional requirements not in the court’s construction of the claims, JMOL of infringement must be granted.²¹

B. The District Court’s Judgment that Facebook Does Not Infringe the ’316 Patent Should Be Reversed

Facebook’s sole non-infringement position and the district court’s sole ground for denying JMOL was that BigPipe did not assemble a “cohesive diary page” because the browser needed to access additional data (image files and additional formatting information) from the Internet to render a Facebook page. [See A8005] The position was wrong as a matter of law because the claims and claim construction only require a “page definition” from BigPipe—i.e., code that tells the browser exactly how the page should look—as made plain by the patents’ disclosure of a system in which the browser receives links in the page definition and uses them to retrieve additional data.

²⁰ See, e.g., *Moba, B.V. v. Diamond Automation, Inc.*, 325 F.3d 1306, 1314-16 (Fed. Cir. 2003) (reversing denial of patentee’s JMOL motion on infringement); *Broadcom Corp. v. Emulex Corp.*, 732 F.3d 1325, 1333 (Fed. Cir. 2013) (affirming JMOL of infringement).

²¹ *Broadcom*, 732 F.3d at 1333; *Moba*, 325 F.3d at 1315-16.

1. The '316 Claims Require a Page Definition from the Applet, But Not a Displayed Page

As construed by the district court, a “diary program” assembles a cohesive diary page “by combining, at the time of display, the content data with the page design, to generate a *page definition* . . .” [A148, emphasis added] “Page definition” is in turn defined as “information that completely defines the appearance of the page.” [A147] These constructions taken together define the role of the “diary program”: to generate the information that “completely *defines*” the page, which the browser can then use to display the page exactly as specified.

Because the diary program only creates the definition of a page, but does not render it, it is entirely permissible for the program to generate a page definition that contains URLs for content and page design elements such as CSS resources, while leaving it to the browser to fetch those elements when displaying the page. Such URLs are shorthand ways of specifying which content and design elements define the page.

The flaw in Facebook’s non-infringement argument stems from its misinterpretation of the requirement that “the content data and page design be fully integrated for display,” which appears in the court’s construction of “cohesive diary page.” Under Facebook’s reading, “the content data and page design” refers to all the content data or page design elements that are used by the browser to *render* the page,

and the page definition is thus completed by the browser, rather than the diary program. But this reading ignores the context in which the term “cohesive diary page” appears in the claim and the antecedent basis for the terms in the district court’s construction of “cohesive diary page.”

The claimed method entails first sending certain content data and page design from the server to the user system, and then assembling the cohesive diary page by dynamically combining this same content and page design:

Sending diary information from the diary server to the user system . . . comprising **content data** [and] a **page design**

Assembling the **cohesive diary page** by dynamically combining **the content data and the page design** . . . [i.e., form[ing] the cohesive diary page by combining, at the time of display, the content data with the page design, to generate a page definition]. [A110, emphasis added]

Thus, when the construction of “cohesive diary page” refers to “the content and page design” being fully integrated for display, the same antecedent basis applies: it is only the previously sent down content and page design (which is used to generate the page definition) that must be fully integrated, and not all content and page design that might be used by the browser to render the page.²²

²² Consistent with this understanding of the claims, the parties stipulated that “page design” meant “layout or style information that defines, *at least in part*, the visual appearance of a cohesive diary page, independent of the particular content of the page.” [A146, emphasis added]

Indeed, the '316 patent specification fully contemplates that page definitions generated by the diary program will be written in HTML code and include universal addresses (URLs) that reference external material. The '316 patent teaches that its diary program generates a page in HTML code, which is then “displayed as a diary page by the browser.” [A103] And as previously described, the '362 patent specification, which is incorporated by reference into the '316 patent, expressly describes the browser downloading additional information “identified by [URLs] in the page definitions” when displaying the page. [A135-36] There are no examples in the specifications in which a page definition does not reference external information. Thus, any understanding of the construction of “page definition” that precluded such external references would be presumptively incorrect.²³

2. Facebook’s BigPipe Applet is a Diary Program that Combines Content and Page Design to Form a Cohesive Diary Page, As Claimed

The parties did not dispute how Facebook’s system works as a technical matter. As a Facebook witness explained, in response to a request from a user that a page be displayed, the Facebook server separately sends an HTML template (page design) and pagelets (content data) to the user’s computer, where the BigPipe applet, running in the browser, inserts the pagelets into the template. [A10748-749;

²³ See *Nellcor Puritan Bennett, Inc. v. Masimo Corp.*, 402 F.3d 1364, 1368 (Fed. Cir. 2005) (“[A] construction that excludes all of the embodiments of an invention is rarely, if ever, correct.”) (internal quotations omitted).

A10763-64; A10459-462] As Facebook engineer Mr. Parker admitted, the resulting document contains “[a]ll of the external resources that the browser needs to build the page. . . .” [A10770]²⁴ In other words, it completely defines the appearance of the page.

There was no contrary evidence from which a jury could have found that BigPipe did not generate the page definition. Indeed, at sidebar even the district court acknowledged that the evidence established that BigPipe defines the page, telling Rembrandt’s counsel “I think you are correct that it completely defines it.” [A10837]

In its attempt to create a factual dispute, Facebook relied heavily on a demonstration by Mr. Parker, showing that when the browser is artificially prevented from accessing external content specified by URLs in a page definition, it cannot display the page properly. [A10767-68] But this unsurprising fact—which Rembrandt never disputed—is irrelevant to whether BigPipe generates a page definition in the first place.

Furthermore, Mr. Parker’s conclusory responses to the district court’s questions agreeing that BigPipe did not “assemble a cohesive diary page” are not substantial evidence supporting non-infringement. To the contrary, as Mr. Parker conceded, his understanding of the court’s questions about “assembly” did not relate back to the court’s claim construction, which he had never read, [A10770; A10773]

²⁴ See also A10690-91; A10774.

but rather were meant to convey that the browser, rather than BigPipe, loaded the external content as the page was rendered:

Q: Okay. I think I understand. The assembly that you were talking about is the assembly that the browser does taking that HTML page definition and retrieving the various links to create the page; is that fair?

A. Yeah, among other things, parsing HTML, et cetera. [A10773]

Given Mr. Parker's misunderstanding of what "assembling a cohesive diary page" referred to, no reasonable jury could have relied on his answers.

3. The District Court Relied on a Non-Existent "Fact Question" to Deny JMOL

In light of the undisputed evidence, the district court erred when it denied JMOL on the grounds that the issue of infringement was a "jury issue" that came down to an "evidentiary battle." [A12639; A12643] Contrary to the court's conclusion, there were no factual disputes for the jury to resolve—Mr. Parker's explanation of BigPipe did not differ materially from Dr. Golbeck's. Nor was there a dispute over expert interpretation of the evidence, as Facebook declined to provide any.

Thus the jury's verdict did not result from its weighing of evidence against Rembrandt. Rather, it rested entirely on an incorrect understanding that the claims precluded the diary program from generating a page definition that includes URLs. Because this was a pure error of law, it can and should be reversed by this Court. For example, in *Moba*, this Court reversed the district court's denial of JMOL of infringement when the jury's verdict rested on adding an additional requirement to

the court’s construction of the disputed claim term which “[n]either the language of the claim itself nor the Court’s order defining this language requires”²⁵ Similarly, in *Broadcom v. Emulex*, the Court affirmed a JMOL of infringement when the defendant’s argument rested on an “incorrect notion” of what the disputed limitation required.²⁶

Additionally, the district court wrongly concluded that the jury could have found non-infringement because BigPipe “does not read the content,” “parse the HTML of a page, generate the HTML, or even know its contents.” [A12641-42] But again, these facts are undisputed, and irrelevant. Nothing in the claim construction requires the diary program to “parse,” or “know” the content of a pagelet. And as for “generating” HTML, the claim only requires that it generate a page definition by combining content and page design. Nothing precludes the combined content data from including HTML generated elsewhere. Thus, as in *Moba*, a jury finding non-infringement on these bases would impermissibly add limitations to the claims.

C. The Judgment that Facebook Does Not Infringe the ’362 Patent Should Be Reversed

The district court’s denial of JMOL on ’362 claim 8 was similarly flawed.

²⁵ *Moba*, 325 F.3d at 1314 (internal quotations omitted).

²⁶ *Broadcom*, 732 F.3d at 1333.

First, the parties' above dispute about BigPipe applied equally to the '362 patent. As Facebook acknowledged, the requirement in the '362 patent for an "applet" that "dynamically generat[es] a page definition for the presentation of the object," "incorporates substantially the same requirement" [A8015] as the "assembling a cohesive diary page" limitation in the '316 patent. Thus, the district court's denial of JMOL was inappropriate for all of the same reasons.

As to the only distinct issue with respect to the '362 patent, the district court also erred in finding that there was a dispute on the evidence of whether Facebook met the "AUA database" limitation under the doctrine of equivalents. The only affirmative evidence on this point came from Rembrandt's expert Dr. Golbeck, who testified that the "AUA database" requirement was met by equivalents via the Facebook database that stored URLs in abbreviated form that are then combined with boilerplate. [A10703-704] As Dr. Golbeck testified, the two approaches are not substantially different:²⁷

Q. From a computer science perspective, is there any substantial difference between storing something in a database and storing something part of it in a database and part of it in the code?

A. There is not.

Q. Why [do] you say that?

A. In the end what's output to the user looks the same. So if Facebook were to store the full URL, the user would see a full URL. If they store

²⁷ See *Voda v. Cordis Corp.*, 536 F.3d 1311, 1326 (Fed. Cir. 2008) (holding that the insubstantial differences test is sufficient to prove doctrine of equivalents).

part of it in the code and part of it in the database, it ends up being the same for the user on the end. So there's no way to observe the actual difference. [A10704]

Facebook never called its infringement expert, and never provided fact testimony on this point.²⁸

The district court said it found a “conflict of evidence” where Dr. Golbeck supposedly conceded that the function of Facebook’s database differed from that of the claimed AUA database. [A12647] But in fact Dr. Golbeck conceded nothing of the sort.

The district court was presumably referring to testimony in which Dr. Golbeck conceded that the abbreviated URLs stored by Facebook—called FBIDs—could not, by themselves, serve the function of URLs, because they could not be used anywhere on the internet. [A8019; A10726] But Dr. Golbeck never contended otherwise. She did not say that FBIDs were equivalent to URLs, but that a database system that could transform FBIDs back into URLs was insubstantially different from one that

²⁸ Rembrandt corroborated Dr. Golbeck’s description of how the Facebook database generates permalink URLs with testimony by deposition designation from Facebook engineer Christopher Struhar. [A10735]

stored the URLs verbatim. [A10704; A10725-26] The district court erred as a matter of law by performing the equivalence comparison on a subset of the claim limitations, and reversal is required.²⁹

D. The Judgment that the '316 and '362 Patents Are Invalid Should Be Reversed

1. Renshaw Lacks an Applet that Generates a Page Definition

Facebook's only invalidity argument for '362 claim 8—anticipation by Renshaw—cannot succeed because Renshaw indisputably lacks the claimed applet that “dynamically generate[s] a page definition . . . from the presentation context and the AUA.” [A140] Contrary to what is claimed, Renshaw's system generates its page definition completely at the server, using conventional techniques, and uses its applet solely for the purpose of *displaying* the already defined page.

Renshaw discloses a simple technique for displaying “embedded HTML documents,” [A10800] *i.e.*, web pages that are displayed within portions of larger web pages, as illustrated in Figure 3 of Renshaw:

²⁹ See *Caterpillar Inc. v. Deere & Co.*, 224 F.3d 1374, 1380 (Fed. Cir. 2000) (“[T]he individual components, if any, of an overall structure that corresponds to the claimed function are not claim limitations. Rather, the claim limitation is the overall structure corresponding to the claimed function.”).

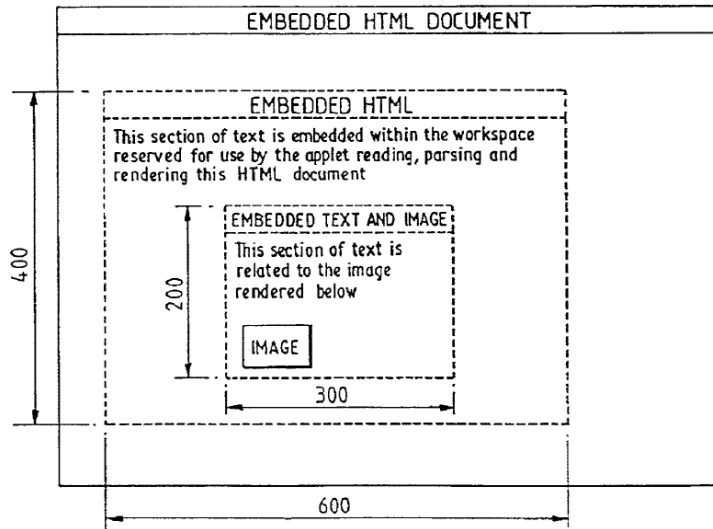


FIG. 3

[A8230] Because conventional web browsers have no mechanism for directly displaying such “multi-layered HTML documents,” [A8235] Renshaw instead uses “parsing and rendering applet[s].” [A8235; A10803] As explained in the patent, these parsing and rendering applets obtain “HTML documents” from the server, and then render “the HTML instructions contained therein . . . to the area of the screen reserved for used [sic] by the applet.” [A8236] In short, and as Facebook’s expert Mr. Klausner explained, each “Java applet, is itself an HTML parser that is capable of parsing and rendering HTML instructions,” [A10803] and thus “Renshaw describes [each] applet as effectively a browser.” [A10811]

Because Renshaw’s applets act like web-browsers, their function in Renshaw’s system is merely to parse and render (*i.e.*, display) web pages already completely defined in HTML documents, not to dynamically generate new web page definitions, as required of the applet of ’362 claim 8.

In denying Rembrandt’s motion for JMOL the district court reasoned that Mr. Klausner testified that “Renshaw[’s] applet receives instruction on how to present the page; and based on the instructions, dynamically generates the information that completely describes the appearance of the page.” [A12647-48] But Mr. Klausner never testified that the Renshaw applets generate a new *page definition*—*i.e.*, new information that “completely defines the appearance of the page.” To the contrary, Mr. Klausner conceded that what each applet does is “pars[e] and render[] HTML instructions.” [A10803] That is, each applet does nothing more than cause an *already defined* HTML page to be displayed.

To be sure, Mr. Klausner testified that the “applet . . . can by itself create dynamically what is shown in the web page.” [*Id.*] But it is clear from the context of Mr. Klausner’s statement that he was merely characterizing each applet’s “parsing and rendering” capability. [*Id.*]

Thus, Mr. Klausner’s testimony, even if accepted by the jury, cannot support the verdict, and JMOL should be entered in Rembrandt’s favor.

2. The Rasansky/Wang Combination Does Not Render the ’316 Claims Obvious

Facebook’s only invalidity argument for the ’316 claims—obviousness over Rasansky in view of Wang—must fail as a matter of law because neither Rasansky nor Wang teaches a “diary program” that, as required, “[a]ssembl[es] the cohesive

diary page by dynamically combining the content data and the page design,” to generate a “page definition.” Facebook admitted that Rasansky has no such “diary program.” [A10794-795] And while Wang does use an applet to generate and display an appointment calendar, it does so without combining content and page design to generate a page definition, and thus fails to fill the gap in Rasansky.

In his testimony, Facebook’s expert Mr. Klausner opined that the skilled artisan would have adapted Wang’s applet to generate the cohesive diary page that he asserted was disclosed in Rasansky. But Mr. Klausner never identified any description in either Rasansky or Wang of assembling a page definition by dynamically combining content data and page design. Instead, he merely asserted that Wang provided the required “assembling” step “because the applet is what does the assembling. Wang sends from the web server to the client the applet that draws and assembles the cohesive diary calendar, the page.” [A10797]

Notably lacking from this testimony is any evidence about *how* Wang supposedly assembles the cohesive diary page. In particular, there is no evidence that Wang generates a “page definition” by combining “content data” and “page design” as required by the claim.

As Rembrandt’s expert testified, the Wang reference teaches away from generating a page definition in HTML, and there is no evidence that the applet in Wang generates a page definition at all when it displays the page. [A10832] Indeed, Mr.

Klausner never stated that Wang generated a “page definition.” And to the extent Mr. Klausner was implicitly applying the court’s claim construction, his conclusory analysis is entitled to no weight because it was based on the same misunderstanding of the role of the diary applet that Facebook relied on throughout trial: as his testimony regarding Renshaw made clear, Mr. Klausner was incorrectly equating displaying the page with generating a “page definition.”

Moreover, Mr. Klausner’s analysis of the assembly step omits any reference to the requirement to dynamically combine content and page design. Mr. Klausner referred to a single passing mention in Rasansky to “a lower level library of generally useful routines . . . [for performing] such generic tasks as filling in HTML templates.” [A10796, A8203] But nothing in Rasansky or Mr. Klausner’s testimony describes the use of such HTML templates to generate page definitions by combining them with content data. Nor did Mr. Klausner provide any reason why, in the hypothetical Wang/Rasansky combination, such templates would have been used by Wang’s applets to assemble cohesive diary pages.

In rejecting Rembrandt’s motion for JMOL that the ’316 patent claims were not invalid, the district court failed to address this gap in Mr. Klausner’s obviousness analysis. Instead, the district court improperly paraphrased Mr. Klausner’s testimony as stating that Rasansky disclosed “a series of page design templates used to generate calendar Web pages stored in the databases.” [A12649] But Mr. Klausner

never identified any teaching to use such templates to assemble the claimed diary pages.

Ultimately, what Facebook’s evidence lacks is any articulated reason why a skilled artisan would have arrived at the inventions *as claimed*.³⁰ While Mr. Klausner purported to explain why Rasansky’s calendaring system might have been modified to use Wang’s applets, he failed to articulate any reason why such modification would have resulted in the applet assembling page definitions by combining content and page design, particularly when *neither Rasansky nor Wang disclosed this concept*. Because Facebook failed to provide clear and convincing evidence that “a skilled artisan would have been motivated to combine the teachings of the prior art references *to achieve the claimed invention*,”³¹ the jury’s finding of obviousness must be reversed.

III. THE DISTRICT COURT ABUSED ITS DISCRETION IN EXCLUDING PORTIONS OF DR. GOLBECK’S REPORT RELATING TO PRIVACY LEVEL INFORMATION

While Facebook failed to establish that the patents were invalid at trial, Rembrandt’s invalidity case was also improperly hampered by the district court’s earlier

³⁰ See *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 418 (2007) (noting importance of providing “a reason that would have prompted a person of ordinary skill in the relevant fields to combine the elements *in the way the claimed new invention does*”) (emphasis added).

³¹ *InTouch Tech., Inc. v. VGO Communications, Inc.*, 751 F.3d 1327, 1347 (Fed. Cir. 2014) (internal quotes omitted) (emphasis added).

Daubert ruling. The court erroneously prohibited Rembrandt's technical expert, Dr. Golbeck, from testifying that the prior art did not disclose the "privacy level information" recited in the '316 claims because her testimony supposedly "impermissibly alter[ed] and narrow[ed]" the district court's construction of that term. [A33] To the contrary, it was the district court's ruling that ignored the proper claim construction.

In his expert report, and at trial, Facebook's expert Mr. Klausner opined that Rasansky disclosed the "privacy level information" in the '316 claims by describing a system in which a user could send e-mail invitations to other users to attend events displayed in a calendar web page. [A10810] According to Mr. Klausner, the e-mail addresses in those invitations constituted the claimed privacy level information. [A10809-810]

Dr. Golbeck, in her rebuttal report, explained the flaw in Mr. Klausner's analysis. Noting that the district court's construction of "privacy level information" required "information that describes or specifies *which* user(s) or categories of users are permitted to view particular content on a cohesive diary page," Dr. Golbeck pointed out that a mere e-mail address in an e-mail could not perform this function because it "does not define the group of users who may see a given event in a Calendar." [A1636, emphasis added]

In granting Facebook's motion to strike this testimony and similar testimony

regarding other references, however, the district court ignored the plain meaning of its construction. In particular, the district court faulted Dr. Golbeck for assuming that privacy level information must identify the “metes and bounds of who has permission” to view specific content, rather than merely identifying, as did the e-mail address, a single user (out of many) who had that ability. [A1627] But Dr. Golbeck’s “metes and bounds” understanding was precisely the import of the original stipulated construction. [A146] Consistent with the patent, which discloses setting “privacy levels” to a category such as “world, friend, close friend, best friend, and owner,” [A103] that construction used the modifier “which” to signal that the “user(s) or categories of users” identified by the “privacy level information” was categorical, constituting the class of *all* of the users who had access to displayed content. [A146] Had the court or the parties not intended “privacy level information” to be categorical, they would have used a different modifier—e.g., “any”—or no modifier at all. By ignoring the plain meaning of “which” in the construction, it was the district court, not Dr. Golbeck, that misinterpreted it.³²

As there was no legal basis for excluding her testimony, a new trial should be granted on invalidity of the ’316 patent.

³² To be consistent with the district court’s ruling, its construction would have to be modified as follows: “information that describes or specifies ~~which~~ user(s) or categories of users ~~are~~ permitted to view particular content on a cohesive diary page.”

IV. THE DISTRICT COURT'S IMPROPER AND PREJUDICIAL QUESTIONING OF FACEBOOK'S LAY WITNESS REQUIRES A NEW TRIAL

A. Legal Standard

The Federal Circuit reviews the denial of a new trial motion under regional circuit law.³³ In the Fourth Circuit, although a trial court has authority to directly participate in the examination of witnesses, that authority is not unbounded.³⁴ In particular, the Fourth Circuit has held that it is important “that the court minimize its own questioning of witnesses, to the end that any such judicial departure from the normal course of trial be merely helpful in clarifying the testimony rather than prejudicial in tending to impose upon the jury what the judge seems to think about the evidence.”³⁵ When the judge “abandons his proper role and assumes that of advocate” he has abused his authority to participate in the examination of witnesses.³⁶

³³ *Revolution Eyewear, Inc. v. Aspex Eyewear, Inc.*, 563 F.3d 1358, 1370 (Fed. Cir. 2009).

³⁴ *See Sit-Set, A.G. v. Universal Jet Exch., Inc.*, 747 F.2d 921, 925 (4th Cir. 1984) (granting a new trial motion “because of impermissibly extensive and intrusive interventions by the trial judge in the jury’s fact-finding function”); *Crandell v. United States*, 703 F.2d 74, 78 (4th Cir. 1983) (“This privilege or duty, however, is subject to reasonable limitations.”); *see also United States v. Barnhart*, 599 F.3d 737, 743 (7th Cir. 2010) (the court’s “discretion to question witnesses is not unfettered”).

³⁵ *Pollard v. Fennell*, 400 F.2d 421, 424 (4th Cir. 1968) (quoting *Groce v. Seder*, 267 F.2d 352, 355 (3d Cir. 1959)).

³⁶ *United States v. Karnes*, 531 F.2d 214, 217 n.3 (4th Cir. 1976) (quoting Advisory Committee Note to subdivision (b) of Federal Rule of Evidence 614).

Under Fourth Circuit law, to decide whether such prejudice has occurred, “it is necessary to look not merely at the challenged questions in isolation but also at the demeanor and conduct of the trial judge throughout the trial”³⁷ “[T]he court ‘must not create an appearance of partiality by continued intervention on the side of one of the parties or undermine[] the effective functioning of counsel through repeated interruption of the examination of witnesses.’”³⁸

B. The District Court’s Improper Questioning Denied Rembrandt the Right to An Impartial Trial

The district court’s questioning of Mr. Parker went far beyond clarification or other permissible judicial intervention. The core promise of fair trial, that the judge will appear—and be—impartial, was compromised.³⁹

First, and most egregiously, the district court’s questioning of Mr. Parker was a clear signal to the jury that the district court had resolved the central issue in the case—whether BigPipe assembles a cohesive diary page—in Facebook’s favor. The district court asked Mr. Parker a series of unmistakably leading questions on the

³⁷ See, e.g., *United States v. Parodi*, 703 F.2d 768, 776 (4th Cir. 1983).

³⁸ *Castner*, 50 F.3d at 1272 (alteration in original) (internal quotations and citations omitted).

³⁹ See *id.* Facebook demonstrated that it was well aware of the impropriety of the district court’s questioning of Mr. Parker, declining even to mention the testimony in its closing—despite it being the only affirmative evidence Facebook allegedly had of non-infringement. [A10857-862]

issue, that were posed as statements to be agreed with, and posed in a way that suggested the court itself believed in its truth (e.g., “would it be fair then to say that the browser assembles a cohesive diary page but BigPipe sends to the browser instructions on how to do it?”). [A10769] Having heard these questions, the jury could have reached only one conclusion—the judge believed that the browser, not BigPipe, assembled a cohesive diary page, and thus that Facebook did not infringe. And because the parties’ dispute on invalidity centered on the same issue—whether the role of the diary applet was to render the page for display—the district court’s questions signaled that it agreed with Facebook on invalidity as well.

The Fourth Circuit has long held that such judicial interference in the jury’s deliberations require a new trial. For example, in *Sit-Set*, the Fourth Circuit granted a new trial on the basis of judicial questioning when, as here, “the overall effect could only have been to convey to the jury a judicial view—and a legally erroneous one—that though the issues might technically be open ones for the jury’s resolution, there was but one way reasonably to resolve them.”⁴⁰ Similarly, in *Pollard*, the Fourth Circuit granted a new trial when the district court asked leading questions

⁴⁰ *Sit-Set*, 747 F.2d at 926; see also *Maheu v. Hughes Tool Co.*, 569 F.2d 459, 472 (9th Cir. 1977) (“We have no choice but to reverse the judgment on the ground that the trial court’s one-sided characterization of Maheu came close to directing a verdict in his favor, thus denying Summa a fair trial.”).

“tending to impose upon the jury what the judge seems to think about the evidence.”⁴¹ As the Fourth Circuit subsequently explained, “the defendants were entitled to a new trial because the judge had asked leading questions . . . creating a record from which we inferred that the judge unduly favored the plaintiffs.”⁴² The district court’s leading questions here similarly require a new trial.

Second, the prejudice here was heightened because although the district court’s questions were infused with the gravitas of judicial authority—signaling to the jury that the district court believed that Mr. Parker’s testimony was relevant, indeed dispositive—in fact, Mr. Parker’s answers were not probative of infringement or invalidity at all. As discussed, Mr. Parker did not know the court’s claim construction, [A10770; A10773] and subsequently made clear that he was using “assembling the cohesive diary page” inconsistently with the court’s construction to refer to the browser’s display of the visual page. [A10773]

In denying Rembrandt’s motion for a new trial, the district court acknowledged its duty to maintain the appearance of impartiality, but concluded that it had done so because it had only “occasionally asked questions to clarify a confusing or unclear point.” [A12652] But the district court’s questions to Mr. Parker cannot be

⁴¹ *Pollard*, 400 F.2d at 424.

⁴² *United States v. Wolfe*, 1994 WL 118111, at *5, 23 F.3d 404 (Table) (4th Cir. 1994) (unpublished).

described as mere efforts to clarify the evidence. The questions were not directed to the technical operation of the accused system, which is all Mr. Parker had been called to testify about, but rather Facebook’s ultimate non-infringement position, and they made plain the district court’s own view of the evidence. Not only the appearance of impartiality—but the fact of impartiality—was tattered.

Nothing that happened after the district court’s questioning could have, or did, cure the substantial prejudice to Rembrandt. No amount of questioning by Rembrandt, much less the limited questioning allowed, could have ameliorated the prejudice. As the Fourth Circuit has explained, “the impact of a question by the court on both the witness and the jury . . . should not be underestimated.”⁴³ Moreover, the Fourth Circuit has expressly held that “boilerplate final instructions . . . could not be thought to have removed the impression here necessarily conveyed of judicial partiality for, indeed acceptance of, the defendant’s position.”⁴⁴

Finally, while the district court’s intervention with Mr. Parker was by itself sufficiently prejudicial to require a new trial, its impact was exacerbated by numerous other interventions that tilted the trial in Facebook’s favor from its inception.⁴⁵ Whereas the district court *sua sponte* objected to Rembrandt’s opening multiple

⁴³ *Pollard*, 400 F.2d at 424.

⁴⁴ *Sit-Set*, 747 F.2d at 926-27.

⁴⁵ *See, e.g., Parodi*, 703 F.2d at 776.

times, cross-examined each of Rembrandt's fact witnesses for financial bias, and persistently interrupted during Rembrandt's expert witness testimony primarily to undermine her credibility, the district court made no attempt to challenge the credibility of Facebook's witnesses and rarely interrupted Facebook's examinations.⁴⁶ This one-sided intervention further left the jury with the impression that the district court believed the case should be decided in Facebook's favor.⁴⁷

Accordingly, if the Court does not grant JMOL on all issues, it should vacate the judgment and remand for a new trial. Rembrandt also respectfully requests that this Court include instructions that the case be assigned to a different judge.⁴⁸ While Rembrandt recognizes that such requests are disfavored, it is warranted in these circumstances to ensure that Rembrandt is able to receive a fair trial.

⁴⁶ *See supra* 18-22.

⁴⁷ *Cf. Nationwide Mut. Fire Ins. Co. v. Ford Motor Co.*, 174 F.3d 801, 808 (6th Cir. 1999) (remanding for a new trial because of the "appearance of partiality by the trial judge" and explaining that "soliciting objections from a party was one factor that led to a remand for judicial misconduct") (*citing Hickman*, 592 F.2d at 933).

⁴⁸ *Crandell v. United States*, 703 F.2d 74, 75-78 (4th Cir. 1983) (after determining the trial judge's conduct deprived the parties of a fair trial, the Fourth Circuit "re-mand[ed] with instructions to the Chief Judge of the Eastern District of Virginia to reassign the case to a different trial judge"); *see also Liteky v. United States*, 510 U.S. 540, 554 (1994) ("Federal appellate courts' ability to assign a case to a different judge on remand rests not on the recusal statutes alone, but on the appellate courts' statutory power to 'require such further proceedings to be had as may be just under the circumstances.'") (quoting 28 U.S.C. § 2106).

V. DAMAGES

The district court also abused its discretion in excluding Rembrandt's initial damages expert report and then categorically refusing to allow any supplemental reports.

A. Legal Standard

Under Federal Rule of Evidence 702 and *Daubert*, a district court acting as “a gatekeeper” may exclude expert testimony “if it is based on unreliable principles or methods, or legally insufficient facts and data.”⁴⁹ However, “[a] judge must be cautious not to overstep its gatekeeping role and weigh facts, evaluate the correctness of conclusions, impose its own preferred methodology, or judge credibility, including the credibility of one expert over another. These tasks are solely reserved for the fact finder.”⁵⁰

B. The District Court Abused Its Discretion in Excluding the Entire Expert Report of Rembrandt's Damages Expert

The district court refused to let Rembrandt's damages expert Mr. Malackowski testify, citing two alleged methodological defects: (1) that Mr. Malackowski failed to apportion Facebook's revenue to BigPipe and Audience Symbol, Facebook features that correspond to individual claim elements, and not to any entire claim;

⁴⁹ *Apple Inc. v. Motorola, Inc.*, 757 F.3d 1286, 1314 (Fed. Cir. 2014).

⁵⁰ *Id.* at 1314.

and (2) that Mr. Malackowski’s reliance on survey evidence was improper. [A48-53] Both grounds are erroneous as a matter of law.

1. The District Court Erred in Requiring Apportionment Down to Individual Claim Elements

The district court’s rejection of Mr. Malackowski’s apportionment testimony was erroneous because it was based on a misunderstanding of this Court’s apportionment jurisprudence.

As this Court has explained, apportionment of the royalty base is necessary to ensure that the ultimate damage award is based on “the use made of *the invention* by the infringer.”⁵¹ Accordingly, when a multi-component product is accused of infringement, the patentee must identify a “*patent-practicing* feature with a sufficiently close relation to the claimed functionality” to determine the proper base for the reasonable royalty analysis.⁵²

Mr. Malackowski’s apportionment methodology was entirely consistent with this guidance. Long before Facebook started, Mr. Van der Meer invented and claimed a comprehensive system for creating web-based diary pages. The asserted claims include limitations directed to what information must be included on the diary

⁵¹ 35 U.S.C. § 284 (emphasis added).

⁵² *Virnetx, Inc. v. Cisco Sys., Inc.*, 767 F.3d 1308, 1329 (Fed. Cir. 2014); *see also Uniloc USA, Inc. v. Microsoft Corp.*, 632 F.3d 1292, 1318 (Fed. Cir. 2011) (requiring apportionment between the “patented feature and the unpatented features”).

pages, how the pages are assembled, how access to the content of the pages is controlled, where the content for pages is stored on the server, how the page is updated, and even how to finance the system through advertisements. [A110-11; A140-41] In Facebook, the diary pages created according to the claimed invention correspond to the Timeline, Newsfeed, Photo/Video Sharing, and Groups pages, and Mr. Malackowski properly apportioned the damages base down to revenues attributable to these pages. [A13420] Indeed, it would be difficult to identify a patent-practicing feature with a closer relationship to the claimed functionality than those Mr. Malackowski identified.

Nonetheless, the district court held that Mr. Malackowski's apportionment was improper because it did not focus only on the revenue attributable to "BigPipe" and "Audience Symbol," which correspond to the claimed diary applet and "privacy level" limitations respectively, not the claimed invention as a whole. [A51]

The district court's ruling was wrong as a matter of law. This Court has never required apportionment to a subset of the claimed invention. To the contrary, this Court has emphasized that it is improper to focus on the value of individual claim elements, rather than the claims as a whole. Thus, in *Apple v. Motorola*, the Court reversed a district court's rejection of expert damages testimony because the district

court “incorrectly focused on individual claim limitations in isolation.”⁵³ As the Court explained, “the proper inquiry evaluates the expert’s methodology in view of the full scope of the infringing claims.”^{54,55}

The district court here made the same error as the *Apple* court. Although the district court reasoned that apportionment down to BigPipe and Audience Symbol was necessary because it was the addition of those features in 2009 that “cause[d] the alleged infringement,” [A50] BigPipe and Audience symbol are not themselves infringing and do not represent the full scope of the infringing claims. Facebook began infringing when it adopted BigPipe and Audience Symbol only because it was

⁵³ *Apple*, 757 F.3d at 1317.

⁵⁴ *Id.* at 1317-18; *see also Univ. of Pittsburg v. Varian Med. Sys.*, No. 2012-1575, 2014 WL 1387144, at *12 (Fed. Cir. Apr. 10, 2014) (non-precedential) (holding that the value of a beam generator was properly included in the royalty base because it was an element of the infringing system even though it was an element that pre-existed the infringement). Notably, both *Apple* and *Varian* issued after the district court’s *Daubert* decision and after this Court’s denial of the petition for interlocutory appeal.

⁵⁵ In reaching its holding the district court pointed to cases holding that it was not always sufficient to apportion to the smallest-saleable unit. [A49-50] But these cases are irrelevant here, because Rembrandt never based its apportionment analysis on the smallest saleable unit, but rather apportioned beyond the smallest saleable unit to the smallest patent-practicing unit. As *VirnetX* and *Apple* subsequently confirmed, although it may be necessary to apportion to a unit that is smaller than the smallest saleable unit, it is neither necessary nor appropriate to apportion the base to something that is not itself patent-practicing.

already using the other elements of the claims as part of Facebook’s overall system for delivering pages to Facebook users.

Accordingly, the district court abused its discretion in requiring apportionment of the base down to elements that were not the patented features. This same error also infected the district court’s rejection of the royalty rate calculation because the district court’s only ground of rejection of the rate was again that Mr. Malackowski’s apportionment analysis should have been limited to BigPipe and Audience Symbol. [A51]⁵⁶

Furthermore, while the district court based its analysis on the assumption that Facebook could have continued to use the pre-2009 system, [*id.*] the question of whether the pre-2009 Facebook system was a viable non-infringing substitute for Facebook’s current web-based system is a disputed question of fact that was not appropriate for the district court to decide at the *Daubert* stage. Rembrandt’s technical expert expressly opined that Facebook’s system without BigPipe or the Audience Symbol would have been neither non-infringing nor a reasonable alternative.

⁵⁶ Mr. Malackowski had used an apportionment (of Facebook’s operating margins) in the context of the rate for the narrow purpose of calculating an upper bound for the possible rate. [A13464-65; A13469] The district court rejected all of Facebook’s other challenges to Mr. Malackowski’s rate methodology, explaining that “any argument with Mr. Malackowski’s final calculation of the royalty rate based on his application of the *Georgia-Pacific* factors is an issue of weight for cross-examination before the jury.” [A54]

[A1202-1208]. The correctness of this opinion was a question for the jury, not the district court. In any event, at most the possibility of a non-infringing alternative is one factor to be considered in calculating the appropriate royalty rate, not a factor relevant to deciding the portion of the revenue that corresponds to the patented features.⁵⁷

2. The District Court Excluded Mr. Malackowski's Use of Survey Data to Apportion the Base on the Incorrect Legal Standard

The district court also applied the wrong legal standard in excluding Mr. Malackowski's report on the grounds that he had not shown that the relative importance of various Facebook features to users' decisions to use Facebook, as measured by apportionment surveys, was "exactly equal" or "directly correlate[d]" to the revenue attributable to that feature. [A52-53] This level of precision was neither required nor possible.

⁵⁷ See, e.g., *Zygo Corp. v. Wyko Corp.*, 79 F.3d 1563, 1571-72 (Fed. Cir. 1996) (remanding for reconsideration of the royalty rate in light of the fact that defendant could have continued to use a non-infringing product).

This Court has consistently held that the reasonable royalty analysis does not require mathematical exactitude, but rather “necessarily involves an element of approximation and uncertainty,” including in the calculation of the base.⁵⁸ For example, in *i4i*, this Court upheld the admissibility of survey evidence to calculate a reasonable royalty base even though “the data were certainly imperfect, and more (or different) data might have resulted in a ‘better’ or more ‘accurate’ estimate in the absolute sense.”⁵⁹ Moreover, at the *Daubert* stage, all that is required is the expert’s approach “meet the minimum standards of relevance and reliability.”⁶⁰ “Questions about what facts are most relevant or reliable to calculating a reasonable royalty are for the jury.”⁶¹

Mr. Malackowski’s analysis easily met this minimum standard. Calculating the appropriate base here was particularly challenging given Facebook’s business model, which is based on advertising revenue, not charging for the features of the system directly. [A13379; A13383] Mr. Malackowski explained that the survey

⁵⁸ *Lucent Techs.*, 580 F.3d at 1336; *Standard Havens Prods., Inc. v. Gencor Indus., Inc.*, 953 F.2d 1360, 1374 (Fed. Cir. 1991) (holding that the amount of damages “‘need not be proven with unerring precision’”) (citations omitted); *Apple*, 757 F.3d at 1315 (“This court has also recognized that estimating a ‘reasonable royalty’ is not an exact science.”); *Virnetx*, 767 F.3d at 1328.

⁵⁹ *i4i Ltd. P’ship v. Microsoft Corp.*, 598 F.3d 831, 856 (Fed. Cir. 2010), *aff’d*, 131 S. Ct. 2238 (2011).

⁶⁰ *Id.* at 855-56.

⁶¹ *Id.* at 856.

results “were a proxy for the percentage of demand” for Facebook that is driven by each feature, [A13419] and described how user demand is directly linked to Facebook’s advertising revenue “because without a large and engaged base of users, there would be no audience to consume the ads and advertisers would spend their money elsewhere.” [A13420] Facebook’s own damages expert agreed, explaining that “[t]he key insight is that Facebook’s value, both to users and advertisers, is derived from the size of its base of related users.” [A1475] Thus, Mr. Malackowski made the reasonable approximation to use the percentage of user demand for Facebook attributable to the patented invention to apportion the royalty base.

Indeed, this Court has already recognized the linkage between driving demand and value. The Federal Circuit’s entire market value rule jurisprudence allows a patentee to attribute the entire value of a product to a particular feature if it can show that that feature alone drives user demand for the product.⁶² It follows that if multiple features drive demand for a product and thus together create all of the value, one reasonable way to estimate the value attributable to each feature is to consider the portion of demand created by that feature.

Furthermore, the district court ignored that Mr. Malackowski did not solely rely on user surveys in his apportionment analysis. He also relied on surveys of the

⁶² *LaserDynamics, Inc. v. Quanta Computer, Inc.*, 694 F.3d 51, 67 (Fed. Cir. 2012).

advertisers themselves [A13416] and on a detailed analysis of the critical importance of the infringing Timeline and Newsfeed pages—which Facebook CEO Mark Zuckerberg called two of the three “pillars” of Facebook [A13404-14]—that suggested that if anything the survey results underestimated the value of the infringing pages. [A13404-411; A13421-423; A13452-459]⁶³

C. The District Court Abused Its Discretion in Refusing to Let Rembrandt Supplement with a BigPipe Damages Theory

In addition to abusing its discretion in excluding Mr. Malackowski’s initial damages report, the district court further abused its discretion when it prevented Mr. Malackowski from submitting any revised or supplemental report.

Consistent with the clear statutory mandate that the court “shall award the claimant damages” upon a finding of infringement,⁶⁴ district courts routinely grant litigants in patent cases the opportunity to submit a revised damages expert report if the initial report is excluded.⁶⁵ While a district court has discretion to prohibit a

⁶³ See *i4i*, 598 F.3d at 855 (affirming high damages award, in part, because the survey used conservative assumptions so the “damages figure was ‘really an underestimate’ and ‘way low’”).

⁶⁴ 35 U.S.C. § 284.

⁶⁵ See, e.g., *Cornell Univ. v. Hewlett-Packard Co.*, 609 F. Supp. 2d 279, 284 (N.D.N.Y. 2009), amended, 01-CV-1974, 2009 WL 1405208 (N.D.N.Y. May 15, 2009) (Rader, J.); *Dynetex Design Solutions, Inc. v. Synopsys, Inc.*, No. C 11-05973 PSG, 2013 WL 4538210, at *5 (N.D. Cal. Aug. 22, 2013); *Lucent Techs., Inc. v. Microsoft Corp.*, No. 07-CV-2000, 2011 WL 2728317, at *1 (S.D. Cal. July 13, 2011).

party from providing a revised expert report, this discretion is not absolute. As this Court noted in its opinion denying the petition to appeal in this case, “given the nature of the inquiries involved, the rules are not so precise in their application or scope as to make a single opportunity for compliance clearly or always enough.”⁶⁶

Here the district court exceeded its discretion when it summarily denied Rembrandt’s motion to supplement Mr. Malackowski’s expert report in light of the *Daubert* order. [A19-21] Rather than consider the equities of Rembrandt’s request, the district court made plain that it was flatly refusing to allow any revision—imposing a *per se* rule against second chances—denying Rembrandt’s motion requesting to supplement before Facebook even filed its opposition brief. [A20]⁶⁷

Furthermore, as this Court noted in its earlier order, the district court’s prior explanation for not allowing supplementation—that it would be “manifestly unfair”

⁶⁶ *Rembrandt Soc. Media, LP v. Facebook, Inc.*, 561 F. App’x 509, 912-13 (Fed. Cir. 2014); *see also ZF Meritor, LLC v. Eaton Corp.*, 696 F.3d 254, 295-300 (3d Cir. 2012) (holding the district court abused its discretion in refusing “with little more than nominal consideration” to allow the expert to submit an alternate/supplement damages model and noted that “[t]here are indeed times, even when the control of discovery is at issue, that a district court will exceed the permissible bounds of its broad discretion”) (internal quotations omitted).

⁶⁷ *See also* A12387 (“I don’t think that the defendants—the plaintiffs get a chance to do a do-over to reduce the income stream further down to BigPipe and audience symbol level.”); A12415 (“At the time that I [certified the interlocutory appeal], I made it unmistakably clear that this was not going to be an opportunity for a do-over.”); A12467 (“I made clear my concern about no do-over, and then I got this blizzard of papers.”).

to Facebook because the trial was set to start in two working days—no longer applied once the case was stayed following the district court’s certification.⁶⁸ Yet, despite this guidance, the district court never even considered whether the changed circumstance would have warranted allowing supplementation. This categorical exclusion of any attempt at supplementation was itself an abuse of discretion.

Even if the district court had not adopted a per se rule, it would have been an abuse of discretion for the court to reject Rembrandt’s revised expert report adding a theory based specifically on the value of BigPipe. First, Rembrandt was entirely justified in submitting the revised report. A second chance here made sense given that the initial report was a reasonable, good faith attempt to apply the evolving rules for apportionment and even the district court agreed there was at least a “substantial ground for difference of opinion” concerning its inadmissibility. [A12664] Moreover, Rembrandt could not have proffered its new BigPipe damages theory at the date the initial expert reports were due because the theory was based on statements

⁶⁸ *Rembrandt Soc. Media*, 561 F. App’x at 912. Consistent with this guidance, in cases in which the Federal Circuit has affirmed a district court’s decision not to allow for supplementation it has been because the parties were on the eve of trial. *See, e.g., ePlus, Inc. v. Lawson Software, Inc.*, 700 F.3d 509, 523 (Fed. Cir. 2012).

in a critical Facebook presentation that Facebook failed to produce, and which Rembrandt only much later discovered through its own Internet research.⁶⁹ Rembrandt moved promptly to amend its Rule 26 disclosure once Rembrandt discovered the documents and the district court struck Mr. Malackowski's original report, and served the revised report incorporating this disclosure as soon as the stay was lifted. [A4116; A4117.01-4117.14; A3991-92]⁷⁰

Furthermore, Facebook then had ample time to consider the new BigPipe theory. In fact, Facebook had 130 days from when the new theory was fully disclosed to the new trial date, almost identical to the 134 days in the initial schedule between serving the expert reports and trial. [A4461-62] And when the district court struck the revised expert report there were still seven weeks until trial.⁷¹ Thus, allowing Rembrandt to submit the new report would have served the interest of justice while not prejudicing anyone.

⁶⁹ Rembrandt discovered the document on November 1, 2013. [A4460] Expert discovery closed on August 23, 2013.

⁷⁰ Notably, the district court struck Mr. Malackowski's revised report before even considering the propriety of the amended Rule 26 disclosure. It subsequently struck the Rule 26 disclosure on timeliness grounds, without reaching the merits of the new theory. [A17] Striking this disclosure is an abuse of discretion for all of the same reasons as striking Mr. Malackowski's report.

⁷¹ Mr. Malackowski's report was served on April 18, 2014. [A4116] Trial began on June 9, 2014. [A10591]

Finally, the district court further abused its discretion, and heightened the prejudice to Rembrandt, when it refused to allow Rembrandt to present even lay evidence of damages. [A10618-19] This contravened this Court's guidance that damages can be proven without an expert,⁷² and "if a patentee's evidence fails to support its specific royalty estimate, the fact finder is still required to determine what royalty is supported by the record."⁷³

CONCLUSION

For these reasons, Rembrandt respectfully requests that this Court reverse the denial of JMOL on liability, or at least order a new trial on liability; reverse the exclusion of the original damages report as a matter of law; and overturn the district court's refusal to allow a revised damages report. Rembrandt further requests that the Court remand for a new trial on damages and instruct the district court to allow for the parties, if necessary, to submit revised expert reports consistent with this Court's opinion. If the case is remanded, Rembrandt requests assignment to a different judge.

⁷² *Dow Chem. Co. v. Mee Indus., Inc.*, 341 F.3d 1370, 1381-82 (Fed. Cir. 2003).

⁷³ *Apple*, 757 F.3d at 1328.

Dated: February 3, 2015

Respectfully submitted,

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*Attorneys for Appellant
Rembrandt Social Media, LP*

ADDENDUM

**IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF VIRGINIA
Alexandria Division**

REMBRANDT SOCIAL MEDIA, LP,

Plaintiff,

v.

FACEBOOK, INC.,

Defendant.

Case No. 1:13-cv-158

ORDER

The matter is before the Court on plaintiff's motion for judgment as a matter of law and motion for a new trial (Docs. 549 and 552). The motions were fully briefed and argued.

For the reasons stated from the Bench, and for good cause,

It is hereby **ORDERED** that plaintiff's motion for judgment as a matter of law (Doc. 549) is **DENIED**.

It is further **ORDERED** that plaintiff's motion for a new trial (Doc. 552) is **DENIED**.

The Clerk is directed to send a copy of this Order to all counsel of record.

Alexandria, Virginia
August 8, 2014



T. S. Ellis, III
United States District Judge

**IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF VIRGINIA**

Alexandria Division

REMBRANDT SOCIAL MEDIA, LP,)	
)	
Plaintiff,)	
)	
v.)	Civil Action No.: 1:13- CV-00158-TSE
)	
FACEBOOK, INC. <i>et al.</i> ,)	
)	
Defendant,)	
)	

JUDGMENT

Pursuant to the unanimous jury verdict entered on June 13, 2014, and in accordance with Rule 58, Fed.R.Civ.P., JUDGMENT is hereby ordered in favor of defendant FACEBOOK, INC., et al. and against plaintiff REMBRANDT SOCIAL MEDIA, LP.

Alexandria, Virginia
June 13, 2014

FERNANDO GALINDO
Clerk

/s/ M. Pham
Courtroom Deputy

**IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF VIRGINIA
Alexandria Division**

REMBRANDT SOCIAL MEDIA, LP,)
Plaintiff,)

v.)

FACEBOOK, INC., et al.,)
Defendants.)

Case No. 1:13-cv-158

JURY VERDICT FORM

1. Do you find that Rembrandt has established by a preponderance of the evidence that Facebook literally infringes the following patent claims?

(Finding for Rembrandt)

(Finding for Facebook)

U.S. Patent Number 6,415,316:

Claim 4: Yes _____

No ✓

Claim 20: Yes _____

No ✓

Claim 26: Yes _____

No ✓

2. Do you find that Rembrandt has established by a preponderance of the evidence that Facebook infringes by the doctrine of equivalents the following patent claim?

(Finding for Rembrandt)

(Finding for Facebook)

U.S. Patent Number 6,289,362:

Claim 8: Yes _____

No ✓

3. Do you find that Facebook has established by clear and convincing evidence that the following patent claims are invalid?

(Finding for Rembrandt)

(Finding for Facebook)

U.S. Patent Number 6,415,316:

Claim 4: No_____

Yes ✓

Claim 20: No_____

Yes ✓

Claim 26: No_____

Yes ☒

U.S. Patent Number 6,289,362:

Claim 8: No_____

Yes ☒

Date: 6/13/14

REDACTED

Foreperson's Printed Name

REDACTED

Foreperson's Signature

**IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF VIRGINIA
Alexandria Division**

REMBRANDT SOCIAL MEDIA, LP,)	
)	
Plaintiff,)	
)	Case No. 1:13-cv-158
v.)	
)	
FACEBOOK, INC., et al.,)	
)	
Defendants.)	
)	

ORDER

By Order dated December 3, 2013, the testimony of plaintiff's sole expert on damages, James Malackowski, was excluded under Rule 702, Fed. R. Evid., and *Daubert v. Merrell Dow Pharmaceuticals, Inc.*, 509 U.S. 579 (1993). (Doc. 351). Thereafter, the parties sought an interlocutory appeal of this Order to the Court of Appeals for the Federal Circuit. The Order certifying the appeal was issued four days before trial. (Doc. 365). On April 7, 2014, the Court of Appeals for the Federal Circuit denied that appeal. (Doc. 368). A status conference was then scheduled for Friday, April 18, 2014 at 4 p.m. to set a prompt trial date in this matter. But on April 11, 2014, plaintiff filed an unopposed motion to move the status conference from Friday, April 18, 2014 to Friday, April 25, 2014. In its motion, plaintiff stated that the one-week extension was necessary and appropriate for the following three reasons:

- (1) to accommodate plaintiff's trial-counsel scheduling conflicts;
- (2) to allow the parties time to meet and confer on a trial date as requested by the Court,
- and
- (3) to facilitate observance of Good Friday.

It seeming to the Court that the reasons given to extend the status conference one week were genuine, and it further seeming to the Court that plaintiff was not merely seeking a “do-over” of the Court’s Order excluding plaintiff’s damages report, the unopposed motion was granted on April 13, 2014. (Doc. 371).

Yet, on April 18, 2014—the original date of the status conference—a veritable blizzard of motions were filed by both parties, including an attempt by plaintiff to get a “do-over” of this Court’s Order excluding plaintiff’s damages expert’s testimony and report. Given the **nine** motions filed on the exact date of the original status conference, it is clear that the parties were not entirely forthright about their motivations for moving the date of the status conference from April 18, 2014 to April 25, 2014.

Furthermore, plaintiff’s requests that this Court (1) reconsider its Order excluding the report and testimony of its expert on damages, and (2) allow Mr. Malackowski to submit a supplemental expert report on damages, are both unpersuasive and untimely.

First, plaintiff argues that the recent decision of the Court of Appeals for the Federal Circuit denying the request for an interlocutory appeal actually supports plaintiff’s theory of damages because the Federal Circuit corrected the Court on a small point of error. At one point in its Memorandum Opinion, the Court erroneously referred to the “royalty base,” not the “reasonable royalty,” as the amount that a hypothetical licensee would have paid to license the patent. (Doc. 368, p. 6). This minor error in the Court’s Memorandum Opinion, and the Federal Circuit’s subsequent correction of that error in a footnote,¹ is not material to the Court’s original decision and does not provide a basis for reconsidering the Memorandum Opinion and Order

¹ *Rembrandt Social Media, LP v. Facebook, Inc.*, 2014-111, Order at 6-7 n.2 (Fed. Cir. Apr. 4, 2014).

excluding plaintiff's theory of damages. Furthermore, the rest of plaintiff's argument for reconsideration simply rehashes old arguments already considered and rejected. *See French v. King*, 14 F.3d 594 (4th Cir. 1993) (stating that the appellee's motion for reconsideration was properly denied because it merely "attempt[ed] to reargue the merits of her case"); *Pacific Ins. Co. v. Am. Nat'l Fire Ins. Co.*, 148 F.3d 396, 403 (4th Cir. 1998) (stating that a motion for reconsideration "may not be used to relitigate old matters.")² Thus, plaintiff's motion for reconsideration must be denied.

Second, plaintiff argues that Mr. Malackowski should be allowed to submit a supplemental report on damages that includes two new damages models. This motion must also be denied. Plaintiff chose to present only one theory of damages, and on this point, plaintiff lost. Plaintiff has been on notice that the Court will not allow any supplemental theories of damages now that its theory of damages has been stricken, and plaintiff's argument that "any...unfairness vanished when the case was stayed by mutual agreement" is unpersuasive. (Doc. 383, p. 9). Plaintiff will not be allowed a "do-over" of its theory of damages.

Thus, for the reasons stated above, and for good cause,

It is hereby **ORDERED** that the portions of plaintiff's motion for miscellaneous relief requesting that the Court (1) reconsider its December 3, 2013 Order and (2) allow plaintiff's supplemental damages reports are **DENIED**.

The Court is directed to send a copy of this Order to all counsel of record.

Alexandria, Virginia
April 21, 2014



T. S. Ellis, III
United States District Judge

² See also *United States v. Smithfield Foods, Inc.*, 969 F.Supp. 975, 977 (E.D. Va. 1997) (stating that a motion for reconsideration may not be used to "reargue[] the facts and law originally argued in the parties' briefs"); *Above the Belt, Inc. v. Mel Bohannon Roofing, Inc.*, 99 F.R.D. 99, 101 (E.D. Va. 1983) (stating that motions to reconsider are improper if they ask a court to "rethink what the Court had already thought through—rightly or wrongly").

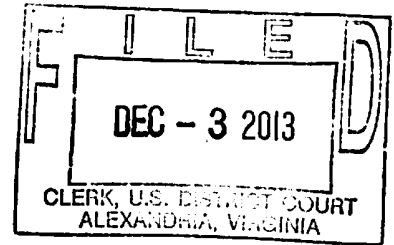
**IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF VIRGINIA
Alexandria Division**

REMBRANDT SOCIAL MEDIA, LP,)
Plaintiff,)

V.

**FACEBOOK, INC.,
Defendant.**

Case No. 1:13-cv-158



ORDER

The matter came before the Court on defendant's motion to exclude the testimony of Dr. Jennifer Golbeck (Doc. 236). The matter has been fully briefed and argued.

Defendant seeks to exclude the testimony of plaintiff's expert, Dr. Golbeck, regarding:

- (1) “privacy level information,”
- (2) whether prior art references are properly combinable, and
- (3) Facebook’s commercial success.

For the reasons that follow, defendant's motion to exclude the specified testimony of Dr. Golbeck must be granted.

I.

Under Rule 702 of the Federal Rules of Evidence, a court may permit opinion testimony from an expert only if such testimony is “the product of reliable principles and methods” applied “reliably to the facts of the case.” Accordingly, the district judge acts as a gatekeeper, tasked with inquiring whether expert testimony “is not only relevant, but reliable.” *Daubert v. Merrell Dow Pharmaceuticals, Inc.*, 509 U.S. 579, 589 (1993).

A.

First, defendant seeks to exclude Dr. Golbeck's expert testimony regarding whether prior art identified by Facebook discloses "privacy level information" as required by the '316 patent, arguing that her testimony is an attempt to reconstrue the term "privacy level information" in a manner inconsistent with the Court's Markman determination. In this Court's June 6, 2013 Order, the term "privacy level information" was construed as "configuration information that describes or specifies which user(s) or categories of users are permitted to view particular content on a cohesive diary page." *Rembrandt Social Media, LP v. Facebook, Inc.*, 1:13-cv-158 at *2 (E.D. Va. June 6, 2013) (Order). Yet, Dr. Golbeck identifies "privacy level information" as:

- (1) a "rule" that "indicates the metes and bounds of who has permission to view particular content;"
- (2) a system that is "not simply a private system where a user logs in and sees data that can't be shared;"
- (3) a way of identifying "the specific user(s) or categories of user(s) that have permission to view particular content;" and
- (4) a system that is not just "all content," or a system merely with a private log-in.

Expert testimony based on these definitions is an attempt to redefine the term "privacy level information" in a manner inconsistent with the Court's June 6, 2013 Order. A statement that privacy level information must indicate the "metes and bounds" of who has permission, or a statement that privacy level information must indicate the "specific" user or users who may access certain content, impermissibly alters and narrows the construction of the term "privacy level information." The Court's construction did not indicate or require that privacy level

information must identify the universe of those who may and may not access certain content. According to the Court's construction, configuration information that describes a user who is permitted to view particular content is privacy level information. Any testimony of Dr. Golbeck altering or varying the Court ordered definition of "privacy level information" must therefore be excluded. Such testimony is not relevant and likely to cause jury confusion.¹

B.

Second, defendant seeks to exclude Dr. Golbeck's testimony in her rebuttal report regarding whether prior art identified by defendant is properly combinable. In her rebuttal report, Dr. Golbeck identifies the opinion of defendant's own expert, Dr. Klausner, who states that the prior art is properly combinable. In an attempt to refute that that opinion, Dr. Golbeck states that the combination of the two prior inventions is not obvious, that there is no apparent reason to combine the two prior inventions, and that Mr. Klausner failed to provide any reason why a person would have been motivated to do so.

Dr. Golbeck's opinion may have been intended to point out that defendant did not carry its burden of establishing "why a person having ordinary skill in the art would combine the references to arrive at the claimed invention." *Innogenetics, N.V. v. Abbott Labs*, 512 F.3d 1363, 1374 (Fed. Cir. 2008). Yet, in so doing, Dr. Golbeck merely states that it is not obvious to combine the prior teachings, and that a person would have no reason to do so. She gives no sources for this opinion, and provides no reason to believe her opinion is based on a reasoned explanation. Accordingly, because Dr. Golbeck's testimony on combining prior art is

¹ "When experts opine as to claim construction issues, the risk of jury confusion is high, and allowance of such testimony is improper." *Callpod, Inc. v. GN Netcom, Inc.*, 703 F.Supp.2d 815, 819 (N.D. Ill. 2010).

unsupported by facts or data, and she provides no reasons or bases for her opinion, it must be excluded under *Daubert* as unreliable and unhelpful.

Furthermore, plaintiff submitted a supplemental brief, the Golbeck Declaration, on this issue, but it was untimely filed. Plaintiff provides no reason for the declaration's untimeliness, nor does it provide a reason that declaration should be admitted as either "substantially justified or harmless." *Rembrandt Vision Techs., L.P. v. Johnson & Johnson Vision Care, Inc.*, 2013 WL 4007537 (Fed. Cir. 2013). In fact, plaintiff does not discuss the tardiness of the declaration at all. Accordingly, the Golbeck Declaration must be excluded as untimely under FED. R. CIV. P. 37(c).

C.

Finally, defendant seeks to exclude the testimony of Dr. Golbeck on the issue of Facebook's commercial success because her testimony is based solely upon the conclusions of plaintiff's damages expert, James E. Malackowski, in his damages report. As plaintiff itself has admitted, if Mr. Malackowski's expert report is admissible, so is Dr. Golbeck's testimony on the issue—and vice versa. Plaintiff offered no other reason as to why Dr. Golbeck's testimony on this issue would be admissible if this Court were to find Mr. Malackowski's damages report inadmissible. Thus, because Dr. Golbeck's testimony regarding commercial success relies solely upon Mr. Malackowski's excluded report, Dr. Golbeck's testimony must be excluded.

II.

Accordingly, for the reasons stated above, and for good cause,

It is hereby **ORDERED** that defendant's motion is **GRANTED** with respect to testimony of Dr. Golbeck regarding "privacy level information" that is inconsistent with the Court's construction.


It is further **ORDERED** that defendant's motion is **GRANTED** with respect to testimony of Dr. Golbeck regarding whether prior art references are properly combinable.

It is further **ORDERED** that defendant's motion is **GRANTED** with respect to the Golbeck Declaration, which is excluded as untimely.

It is further **ORDERED** that defendant's motion is **GRANTED** with respect to testimony of Dr. Golbeck regarding Facebook's commercial success.

The Clerk is directed to send a copy of this Order to all counsel of record.

Alexandria, Virginia
December 3, 2013



T. S. Ellis, III
United States District Judge

**IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF VIRGINIA
Alexandria Division**

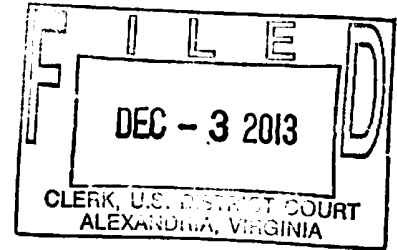
REMBRANDT SOCIAL MEDIA, LP,)
 Plaintiff,)

v.)

FACEBOOK, INC.,)
 Defendant.)

Case No. 1:13-cv-158

REDACTED



MEMORANDUM OPINION

At issue in this patent infringement suit is whether the opinion of plaintiff's expert, James Malackowski, satisfies the requirements of Rule 702, Fed. R. Evid., and *Daubert*.¹ For the reasons that follow, plaintiff's proffered expert testimony on damages fails to qualify as reliable expert testimony under Rule 702 and *Daubert* and must be excluded.

I.

Plaintiff, Rembrandt Social Media, LP ("Rembrandt"), a non-producing Virginia limited partnership with its principal place of business in Pennsylvania, is the owner by assignment of the two patents at issue: U.S. Patent No. 6,415,316 ("the '316 patent") and U.S. Patent No. 6,289,362 ("the '362 patent").² Rembrandt alleges that defendant, Facebook, Inc. ("Facebook"), a Delaware corporation with its headquarters in California,³ infringed both patents by the use of its widely-used Facebook website.

¹ *Daubert v. Merrell Dow Pharmaceuticals, Inc.*, 509 U.S. 579 (1993).

² The inventor assigned the patents to Administrator Nederland, B.V. (Aduna), who thereafter assigned the patents to Rembrandt in 2012.

The '316 Patent

The '316 patent, issued July 2, 2002, is entitled "Method and Apparatus for Implementing a Web Page Diary." In the words of the patent's abstract, the '316 patent describes a "method and apparatus to create a 'diary' containing multimedia references to contents of websites." Rembrandt alleges Facebook directly infringes claim 4 of the '316 patent, which depends from claim 1, and claims 20 and 26, both of which depend from claim 17.

Claim 1 of the '316 patent describes a method for organizing information and displaying this information on the diary page.⁴ In essence, the method of claim 1 involves a server sending a diary program to the user's web browser, along with content data, a page design specifying the presentation of the content data, and configuration information for controlling the way in which the diary page will be displayed, including privacy level information—namely to whom the diary

³ AddThis, Inc., originally named as a second defendant, was voluntarily dismissed. *Rembrandt Social Media, LP v. Facebook, Inc.*, 1:13-cv-158 (E.D. Va. Aug. 12, 2013) (Order).

⁴ Claim 1 claims: "A method of organizing information for display, comprising:

- (a) sending from a diary server to a user system, a diary program capable of being executed by a browser in the user system;
- (b) sending diary information from the diary server to the user system, the information comprising content data including an associated time, a page design to specify the presentation of the content data, and configuration information for controlling behavior of a cohesive diary page, the configuration information including privacy level information;
- (c) assembling the cohesive diary page by dynamically combining the content data and the page design in accordance with the configuration information for the cohesive diary page to be displayed by the diary program running in the browser;
- (d) receiving by the diary server at least one request for at least one change concerning the diary information, from the diary program in the user system; and
- (e) sending, by the diary server to the user system, new diary information for changing the cohesive diary page."

page will be displayed. Once in the user's system, the diary program generates and assembles the cohesive diary page by dynamically combining the content data received from the server with the web page design, also received from the server, according to the configuration information. The cohesive diary page thus assembled is then displayed by the diary program in the user's web browser in a manner consistent with the privacy level information. Claim 4, the allegedly infringed claim, depends from claim 1 and simply adds that "[t]he new diary information is for changing content of the diary page without changing a general appearance of the diary page."

Allegedly infringed claims 20⁵ and 26⁶ of the '316 patent are dependent from claim 17, which describes an apparatus, *i.e.*, a computer software program, that is used essentially to accomplish claims 1 and 20.⁷

⁵ Claim 20 claims: "The apparatus of claim 18, wherein the cover includes advertisements not requested by a user." Claim 18, in turn, depends on the apparatus of claim 17—the program that displays content of a diary page by the diary program in accordance with a cover for a diary.

⁶ Claim 26 claims: "The apparatus of claim 17 further comprising:

- (1) a portion configured to receive, from the diary server, new diary information;
- (2) a portion configured to change content of the diary page without changing a general appearance of the diary page, in accordance with the new diary information."

⁷ Claim 17 claims: "An apparatus that displays and organizes information, comprising:

- (1) a software portion configured to receive, by a user system from the diary server, a diary program capable of being run by a browser in the user system;
- (2) a software portion configured to receive, by the user system from the diary server, diary information comprising content data including an associated time, a page design to specify the presentation of the content data, and configuration information for controlling behavior of a cohesive diary page, the configuration information including privacy level information;

The '362 Patent

The '362 patent, entitled "System and Method for Generating, Transferring, and Using an Annotated Universal Address," describes a method and computer program product for displaying content on a web page. Rembrandt asserts that Facebook infringes claims 8,⁸ 20,⁹ and 21¹⁰ of the

(3) a software portion configured to assemble the cohesive diary page by dynamically combining the content data and the page design in accordance with the configuration information;

(4) a software portion configured to display the cohesive diary page, by the diary program running in the browser."

⁸ Claim 8 claims: "The method of claim 1 wherein the annotation further comprises: at least one content provider authored restriction concerning subsequent presentation of the object."

⁹ Claim 20 claims: "A computer program product, on a computer readable medium, the computer program product comprising:

(1) program code for receiving from a client a request for access to a content object;

(2) program code for identifying, responsive to the request of the client, an annotated universal address (AUA) having a universal address identifying a location of the content object and having an annotation authored by a content provider for controlling an aspect of a presentation of the object, the AUA being present in an AUA database containing at least one AUA;

(3) program code for identifying, responsive to the request of the client, a presentation context for controlling presentation behavior of the object;

(4) program code for transmitting to the client the presentation context, the AUA and an applet for dynamically generating a page definition for the presentation of the object, the page definition being generated from the presentation context and the AUA."

¹⁰ Claim 21 claims: "A computer program product, on a computer readable medium, the computer program product comprising:

(1) program code for transmitting a request to access a content object;

(2) program code for receiving, responsive to the request, an annotated universal address (AUA) having a universal address identifying a location of the content object and including an annotation authored by a content provider for controlling an aspect of a presentation of the object;

'362 patent. Claim 8 is a dependent claim that depends from independent claim 1,¹¹ and claims 20 and 21 are independent claims. Claims 1 and 20 are substantially similar and are essentially directed at a method and computer program product, respectively, for displaying a content object through a page definition generated by an "applet," or computer program. The '362 patent, similar to the '316 patent, describes a method of using a computer program, running on the user's own browser, that generates a complete web page for that user, based on content, page definitions, and presentation information sent from the third-party server. More particularly, the method and computer program may be described as follows: first, the user sends a request for access to some "object" of content. In response to that request, a program identifies the "annotated universal address" (AUA) for the location of that content object, identifies how that content object should be presented on the page (presentation context), and sends to the client the

(3) program code for receiving, responsive to the request, a presentation context for controlling presentation behavior of the object;

(4) program code for dynamically generating a page definition for the presentation of the object, using the presentation context and the AUA;

(5) program code for retrieving the object specified by the universal address."

¹¹ Claim 1 claims: "A computer-based method, comprising the steps of:

(1) receiving from a client a request for access to a content object;

(2) responsive to the request of the client, identifying an annotated universal address (AUA) having a universal address identifying a location of the content object and having an annotation authored by a content provider for controlling an aspect of a presentation of the object, the AUA being present in an AUA database containing one AUA;

(3) responsive to the request of the client, identifying a presentation context for controlling ion [sic] behavior of the object;

(4) transmitting to the client the presentation context, the AUA and an applet for dynamically generating a page definition for the presentation of the object, the page definition being generated from the presentation context and the AUA."

AUA, presentation context, and applet. The “applet” at issue in the ‘362 patent, as described by Rembrandt’s expert, Dr. Jennifer Golbeck, is the same software as the “diary program” in the ‘316 patent. Accordingly, the applet, like the diary program, dynamically combines data with a page design, both received from the server, according to a certain presentation context.

The Facebook Website

The putatively infringing website, Facebook, is a free social networking service delivered through a number of platforms, including its web address, <<http://www.facebook.com>>. The Facebook website runs in the user’s web browser. The Facebook website includes a number of web pages allowing Facebook’s users to share information with each other. For example, when a user logs into Facebook, he or she sees the “News Feed” web page, introduced in 2006, which displays recent activities that have occurred on Facebook and may be relevant or interesting to the viewing user. Such activities are called “stories” and may include the recent activity of the user’s friends—when that user’s friends share photos or video, recommend third party web pages, or engage in other activities. Each Facebook user also has a “Timeline,” which shows basic information about that particular user, along with actions taken by or directed toward that user—including, for example, photos and video uploaded by that user or webpages shared with that user by the user’s friends. Timeline, introduced in 2011, was preceded by a web page called “The Wall,” which provided a similar functionality. Facebook allows users to upload, organize, and store photos and video using a functionality called “Photo/Video Sharing,” which can be viewed by other users based on the privacy controls set by the user who uploaded the photos or video. Finally, Facebook allows users to create pages for businesses (“Pages”), as well as pages for groups (“Groups”) relating to common associations or interests.

In 2009, Facebook introduced two new features to its website: BigPipe and Audience Symbol. Rembrandt's expert, Dr. Golbeck, admitted that the alleged infringement in this case is attributable to the introduction of BigPipe and Audience Symbol in 2009, and that Facebook does not infringe without BigPipe and Audience Symbol.

BigPipe, introduced in Fall 2009, is a web page acceleration and optimization computer program developed by Facebook to increase the speed at which certain web pages are delivered from Facebook's servers to the user's web browser. BigPipe takes a web page and divides it into portions known as "pagelets" using a certain piece of computer code¹² to specify each pagelet. Each pagelet represents a portion of a web page on Facebook. For each pagelet, Facebook's server generates code that describes the format of the pagelet, and sends that code over the internet to the user's web browser. Facebook's server sends the BigPipe program to the user's computer, where it runs in the user's web browser. BigPipe first ensures that certain necessary resources are loaded, and then passes the pagelet code from Facebook's server to the user's web browser, where the pagelet is processed and displayed by the user's web browser. This is accomplished with a single command, which passes the pagelet code obtained from the server to the browser. The user's browser then downloads and processes any additional files needed to display the pagelet fully so that it may display the pagelet for the user. This process is repeated for each pagelet, until the entire web page is displayed in the user's web browser. On average, BigPipe allows webpages to be delivered to users one second faster than Facebook's earlier webpage delivery method. Rembrandt alleges that this technology—the BigPipe script—is the alleged "diary program" recited in claim 1 of the '316 patent, and that BigPipe performs the

¹² Hypertext Markup Language, or "HTML."

assembly step of “assembling the cohesive diary page by dynamically combining the content data and the page design” recited in claim 17 of that patent.

Audience Symbol, introduced in June 2009, is a small icon displayed next to stories on various webpages on Facebook’s website. The symbol signifies the third-party users, or “audience,” allowed to view a particular story. Rembrandt alleges that display of Audience Symbol violates both the ‘316 and ‘362 patents.

Rembrandt alleges that Facebook began infringing the ‘316 and ‘362 patents by introducing BigPipe and Audience Symbol in 2009. Rembrandt seeks a decree that Facebook has willfully infringed both patents; an award of damages for past infringement; an award of treble damages for past willful infringement; either an award of a permanent injunction to prevent Facebook from infringing the patents, or damages for any future infringement; an award of increased damages pursuant to 35 U.S.C. § 384; a decree that the case is exceptional under 35 U.S.C. § 285; and attorneys’ fees and costs. At issue on Facebook’s motion to exclude the damages testimony of Rembrandt’s expert, James E. Malackowski, is whether the expert used a reliable methodology under Rule 702 and *Daubert*.

II.

Rembrandt’s claim for damages in this case rests entirely on the report of its expert, James E. Malackowski.¹³ Mr. Malackowski was asked to determine reasonable royalty damages for Facebook’s alleged infringement of the ‘316 and ‘362 patents during the period in which the

¹³ Facebook does not attack the credentials or qualifications of Mr. Malackowski. Mr. Malackowski is the chairman and Chief Executive Officer of Ocean Tomo, LLC, which provides services to its clients related to intellectual property research, investment, and risk management. He has testified as an expert in federal court and before the International Trade Commission over thirty times. He is certified in financial forensics, and he is a Registered Certified Public Accountant.

asserted claims were allegedly infringed—February 2009 to February 2013. In doing so, Mr. Malackowski purported to base this reasonable royalty on a hypothetical negotiation between a willing licensor (the plaintiff) and a willing licensee (the defendant) taking place at the time the infringement commenced. Such a negotiation appropriately assumed that, absent a license, the patent would be infringed.

In order to arrive at the final reasonable royalty, Mr. Malackowski performed the following three steps:

(1) First, in ascertaining the royalty base, Mr. Malackowski began with the entire revenue stream generated by Facebook from Fall 2009 to February 2013—the time during which the patents were allegedly infringed. Next, he excluded 50% of the total revenue stream, as representing the amount of revenue attributable to the use of Facebook’s non-infringing mobile applications. Next, on the basis of customer and advertiser surveys used to rank the importance of twenty-one features of Facebook, he excluded the amount of revenue attributable to features not causing Facebook to infringe.¹⁴ He did not attempt to determine the revenue attributable to BigPipe and Audience Symbol, the features causing Facebook’s alleged infringement. Based on these steps, the final royalty base was \$ [REDACTED], or 65.19% of Facebook’s total revenue stream.

(2) Next, Mr. Malackowski determined the royalty rate, or the percentage of the royalty base adequate to compensate Rembrandt for the alleged infringement. First, after examining prior license agreements involving purportedly similar technology, Mr. Malackowski set a “lower bound” of 2.3%, representing the minimum Rembrandt would have been willing to accept in a hypothetical negotiation. Next, by using the percentage of Facebook revenue already determined to be attributable to the alleged infringing and convoyed features, he set an “upper bound” of 21.99%, representing the maximum amount Facebook would have been willing to pay. Mr. Malackowski applied the fifteen *Georgia-Pacific* factors¹⁵ to those bounds to arrive at a final royalty rate of 5-6%.

¹⁴ The survey-takers were asked to rank each feature in order of importance. Each feature’s weighted percentage of importance purportedly represents the demand for Facebook driven by that feature. The features tested by the three surveys were: News Feed; Timeline; Photo/Video Sharing; Groups; Like (External); Share (External); Like (Internal); Share (Internal); Comment (Internal); Add Photos/Videos; Find Friends; Friend Request; Photo Tagging; Personal Profile; App Center; Messages (Chat/Email); Events/Calendar; Universal Log-In/Registration; Notifications; Targeted Ads; Search for People/Places/Things; and a category termed “Other Features.”

(3) Finally, Mr. Malackowski multiplied the royalty rate of 5-6% by the royalty base to arrive at the final reasonable royalty of \$[REDACTED].

Facebook attacks the royalty base on four grounds: (1) use of Facebook's entire revenue stream as the starting point for the royalty base violated the Entire Market Value Rule ("EMVR"), which allows a patentee to recover "based on sales for an entire apparatus having several features, but only one patented feature" so long as the patentee shows the entire revenue stream is attributable to the infringing features;¹⁶ (2) the expert apportioned revenue based on features not causing the alleged infringement; (3) the surveys determining each feature's worth exclude important revenue-producing features; and (4) the "importance" of features is improperly equated to some percentage of Facebook's revenue. Furthermore, Facebook attacks the royalty rate on three grounds: (1) the upper bound was calculated using the same four

¹⁵ *Georgia-Pacific v. U.S. Plywood Corp.*, 318 F.Supp. 1116, 1120 (S.D.N.Y. 1970). The fifteen *Georgia-Pacific* factors, which have been adopted by the Federal Circuit, are used by patentees to raise and lower the royalty rate, thereby allowing a patentee to arrive at the final figure that represents the amount a willing licensee would pay to license the patent at issue. Each factor favors the licensor, licensee, or neither. These factors are:

(1) the royalties received by the patentee for the licensing of the patent in suit; (2) the rates paid by the licensee for use of other patents comparable to the patent in suit; (3) the nature and scope of the license; (4) the licensor's established policy and marketing program to maintain the license; (5) the commercial relationship between the licensor and the licensee; (6) the effect of selling the patented specialty in promoting sales of other products of the licensee; the existing value of the invention to the licensor; and derivative and convoyed sales; (7) the duration of the patent and license terms; (8) the established profitability, success, and popularity of the product made under the patent; (9) the utility of the patent property over old modes or devices, if any; (10) the character of the patented invention and benefits to those who have used it; (11) the use which the infringer has made of the invention; (12) the selling price or profit customary in that business to allow for use of the invention; (13) the realizable profit creditable to the invention; (14) the opinion testimony of qualified experts; and (15) the amount a licensor and a licensee would have agreed upon at the time the infringement began.

¹⁶ *Tekmax, Inc. v. Exide Corp.*, 215 F.3d 1339 (Fed. Cir. 1999).

features as the royalty base; (2) the lower bound was calculated using incomparable licenses; and (3) the final royalty rate was arbitrarily selected. Each argument is addressed below.

III.

Relevance and reliability are the touchstones of expert testimony admissibility; an expert's testimony is admissible only if it is both relevant and reliable. *Daubert*, 509 U.S. at 591. As Rule 702 makes clear, expert testimony must not only be "based on sufficient facts and data," but it must also be "the product of reliable principles and methods, reliably applied...to the facts of the case." Rule 702, Fed. R. Evid. An expert's subjective beliefs, his speculation, and his hunches are not admissible expert testimony. *Daubert*, 509 U.S. at 599-600.

If a patentee proves infringement, the patentee is entitled to damages adequate to compensate for profits lost due to the infringer's unlawful conduct, "but in no event less than a reasonable royalty" for the use of the patented invention. 35 U.S.C. § 284. Typically, a reasonable royalty is arrived at through the fiction of a "hypothetical negotiation" between the parties at the time infringement commenced; this negotiation assumes the patent is both valid and infringed, and that both parties are willing to enter into the negotiation. *Lucent Techs., Inc. v. Gateway, Inc.*, 580 F.3d 1301, 1324 (Fed. Cir. 2009). Thus, the reasonable royalty calculation is the product of (1) the royalty base, namely the "revenue pool implicated by the infringement" and (2) the royalty rate, namely the "percentage of that pool adequate to compensate the plaintiff." *Cornell v. Hewlett-Packard Co.*, 609 F.Supp.2d 279, 286 (N.D.N.Y. 2009) (Rader, J.). Of course, plaintiff bears the burden of showing that the expert damages testimony is relevant and reliable, that is, that the methodology used to ascertain the royalty base and the royalty rate is reliable and reasonable. *Lucent*, 580 F.3d at 1324. To carry this burden properly, the patentee

must tie the expert testimony on damages to the facts of the case. *Uniloc USA, Inc. v. Microsoft Corp.*, 632 F.3d 1292, 1315 (Fed. Cir. 2011).

A.

Facebook's attack on the royalty base as violating the EMVR misses the mark. Of course, it is undisputed that a patentee cannot base its theory of damages on the value of an entire product when the infringement constitutes only an improvement or component of the product, unless the patentee can show the demand for the product is driven by the improvement or component. But Rembrandt's expert did not use the entire value of Facebook as the royalty base. Mr. Malackowski began his calculation of the royalty base with Facebook's entire revenue, but he then performed two separate apportionments. The EMVR applies when an expert performs no apportionment, instead using the entire value of a product as the royalty base. Application of the EMVR involves applying the royalty rate to the entirety of a product's revenue. *Lucent v. Gateway*, 580 F.3d 1301, 1336 (2009).¹⁷ Accordingly, the EMVR is not implicated here.

B.

Facebook's second attack is fatal. In calculating the royalty base and rate, Mr. Malackowski failed to apportion Facebook's revenue to BigPipe and Audience Symbol—the features actually causing the alleged infringement. In apportioning revenue based on Timeline, News Feed, Groups, and Photo/Video Sharing, Rembrandt's expert claims damages “far in excess of the contribution of the claimed invention to the market” and thus claims “more than the

¹⁷ See also *State Industries, Inc. v. Mor-Flo Industries, Inc.*, 883 F.2d 1573, 1580 (Fed. Cir. 1989) (“the entire market value rule [] permits recovery of damages based on the value of the entire apparatus containing several features, where the patent related feature is the basis for customer demand”); *Kori Corp. v. Wilco Marsh Buggies and Draglines, Inc.*, 761 F.2d 649, 656 (Fed. Cir. 1985) (“The district court applied the ‘entire market value rule’ and declined to apportion the damages between the value of the unpatented and patented features of the machines sold and rented”).

‘damages adequate to compensate for the infringement.’” *Cornell University*, 609 F.Supp.2d at 283-84.

According to the Federal Circuit, a patentee “must in every case give evidence tending to separate or apportion the defendant’s profits and the patentee’s damages between the patented feature and the unpatented features,” and that evidence must be “reliable and tangible...not conjecture or speculative.” *Uniloc*, 632 F.3d at 1318. Where, as here, the accused technologies represent a small improvement to an existing technology, Rembrandt is only entitled to a royalty based on the incremental value provided by that improvement. *Lucent*, 580 F.3d at 1337. Accordingly, the expert must apportion down to the “smallest salable patent-practicing unit” closely tied to the patent at issue. *LaserDynamics v. Quanta Computer, Inc.*, 694 F.3d 51, 68 (Fed. Cir. 2012). Because the royalty base is meant to represent value gained from the alleged infringement, and thus the amount that a hypothetical licensor would have paid to license the patent, an apportionment including value attributable to more features than just the improvement overcompensates the patentee.

Rembrandt claims that its expert calculated damages, as the Federal Circuit requires, down to the smallest salable patent-practicing unit, and thus apportioning any further is impractical and unnecessary. This argument is unpersuasive. Awarding Rembrandt damages based on the revenue stream attributable to Timeline, News Feed, Groups, and Photo/Video Sharing would award Rembrandt much more than “the use made of the invention by the infringer.” *Oracle America, Inc. v. Google Inc.*, 798 F.Supp.2d 1111, 1115 (N.D. Cal. 2011). In order to determine the revenue actually attributable to Facebook’s use of the invention, Mr. Malackowski needed to apportion further. Of course, the smallest salable infringing unit must be the starting point for the royalty base, but the Federal Circuit has not held “that no further

apportionment is ever necessary once the smallest salable unit is determined.” *Synetix Design Solutions, Inc. v. Synopsys, Inc.*, 2013 WL 4538210 (N.D. Cal. 2013). The smallest salable unit must be closely tied to the patent to suffice, and further apportionment is required “even when the accused product is the smallest salable unit...if the smallest salable unit is still a multi-component product encompassing non-patent related features.” *Id.* For example, in *Lucent Techs., Inc. v. Gateway, Inc.*, 580 F.3d 1301 (Fed. Cir. 2004), the Federal Circuit held that the fact that one feature of a computer program called “Outlook” infringed did not mean that the sale of Outlook could thus become the royalty base. Even though the multi-component Outlook program was the smallest salable unit in that case, “the use of a saleable unit greater than the patented feature is going to introduce *Uniloc* [EMVR] error when the patented feature is a ‘date picker’ [in the Outlook program], whether the saleable unit is a computer loaded with ‘Outlook’ or simply ‘Outlook.’” *AVM Technologies, LLC v. Intel Corp.*, 2013 WL 126233 at *3 (D. Del. 2013) (discussing *Lucent*, 580 F.3d at 1301). Similarly, allowing Rembrandt’s expert to use as the royalty base the entire value of Timeline, News Feed, Groups, and Photo/Video Sharing—all of which can be used independently without infringing—while not using the value of BigPipe and Audience Symbol—the features that actually cause the alleged infringement—would be a mistake of the same kind as allowing Rembrandt’s expert to use the entire value of Facebook.¹⁸

¹⁸ See also *Riles v. Shell Exploration and Production Co.*, 298 F.3d 1302, 1312 (Fed. Cir. 2002) (“In the hypothetical negotiation...Shell may have non-infringing alternatives to [using the patented method]. The market could not award the patentee a royalty for his method divorced of all relation to a potential non-infringing alternative method. The economic relationship between the patented method and non-infringing alternative methods...would limit the hypothetical negotiation”); *Internet Machines, LLC v. Alienware Corporation*, 2013 WL 4056282 (E.D. Tex. 2013) (holding that switches were the smallest salable patent-practicing unit, because their use was the “smallest possible economically sound measure of damages” and there was evidence produced indicating that switch sales drove customer demand for the product); *Oracle*, 798 F.Supp.2d at 1115 (holding that, because a reasonable royalty can only be based on “the use

Accordingly, Mr. Malackowski's apportionment does not adequately represent what Facebook would have been willing to pay to license the patents at issue. As Rembrandt's own expert, Dr. Jennifer Golbeck, has admitted, without BigPipe and Audience Symbol, the four features used as the royalty base—Timeline, News Feed, Photo/Video Sharing, and Groups—do not infringe. In fact, those four features existed before the introduction of BigPipe and Audience Symbol in 2009, and continue to exist without infringing on Facebook's mobile platform. If Facebook did not pay Rembrandt to license the patents, it could have continued to use those four features without infringing. Thus, the claim that Facebook would pay, in a hypothetical negotiation, the entire revenue stream attributable to Timeline, News Feed, Photo/Video Sharing, and Groups runs contrary to what common sense indicates a reasonable licensor would pay for the patents at issue. Instead, Facebook would have paid the worth of the features actually causing the infringement—BigPipe and Audience Symbol.

Thus, Rembrandt's expert apportioned improperly when calculating a royalty base, and his expert testimony must be excluded on that basis alone. His testimony would be unreliable under *Daubert*, and allowing such inflated numbers before a jury would be prejudicial even if Facebook has the opportunity to cross-examine the expert about the royalty base.

Mr. Malackowski's improper apportionment based on those four features, furthermore, affects the calculation of a royalty rate. In calculating the royalty rate, Mr. Malackowski set the upper bound—that is, the most that Facebook would have been willing to pay for the license—by taking into account the results of the three market surveys above, stating that 21.99% represents the portion of Facebook's revenue attributable to the technologies at issue. Accordingly, because Mr. Malackowski uses the incorrect apportionment to determine not only the royalty base but

made of the invention by the infringer," the hypothetical license must be limited to the subset of a computer program that actually infringed, not the entire computer program).

also the royalty rate, both portions of his reasonable royalty analysis are unreliable. Nor is the flaw in Mr. Malackowski's expert opinion merely a dispute of fact; the flaw is in the nature of the analysis. By failing to use the portion of the revenue stream attributable to the infringing features, the entirety of his damages analysis is unreliable.

C.

Next, Facebook claims Mr. Malackowski calculated the royalty base by using surveys that do not test for the importance of major features of Facebook.¹⁹ Although the factual data underlying Mr. Malackowski's surveys may be incomplete, an expert's reliance upon some facts but not others is not always cause to exclude such testimony under *Daubert*. The Federal Circuit has noted that "[t]he existence of other facts...does not mean that the facts used failed to meet the minimum standards of relevance or reliability," and such testimony is not always excludable because "it is not the district court's role under *Daubert* to evaluate the correctness of facts underlying an expert's testimony." *i4i Ltd. Partnership v. Microsoft Corp.*, 598 F.3d 831, 856 (Fed. Cir. 2010). Thus, while the expert may have relied upon an incomplete list of facts in conducting his customer surveys, such matters could be brought to a jury's attention on cross-examination, and Mr. Malackowski's testimony is not excluded on this basis alone.

D.

Furthermore, Facebook claims that the customer surveys used by Mr. Malackowski to calculate the royalty base are flawed because the surveys assume—without explanation—that the weighted importance of any given feature is exactly equal to that same percentage of advertising revenue. For example, Timeline received an average value of 4.0% compared with other

¹⁹ The surveys did not test, for example, the importance of BigPipe or Audience Symbol, nor did they test for the importance of Facebook's global presence and number of users.

features surveyed, and Mr. Malackowski thus assumed that 4.0% of Facebook's revenue is generated by Timeline. In fact, one of Rembrandt's survey experts, Dr. Jerry Wind, admitted that his survey was just meant to determine the features that most drive Facebook's usage, and that "the link between this [usage] data and the revenue question has to be the subject of a separate analysis." Mr. Malackowski did not perform that analysis, and did not explain why weighted importance of some feature to a user directly correlates to a certain percentage of Facebook's advertising revenue. Accordingly, Mr. Malackowski's methodology is suspect and unreliable under Rule 702, Fed. R. Evid. and *Daubert*.

E.

Facebook claims that the expert's calculation of the royalty rate is unreliable because the lower bound (2.3%) of the royalty rate was calculated using two incomparable licenses.²⁰ Such a flaw concerns the factual underpinnings of Mr. Malackowski's methodology, not the methodology itself. The Federal Circuit has stated that "[t]he degree of comparability [between two license agreements] as well as any failure on the part of the expert to control for certain variables are factual issues best addressed by cross examination and not by exclusion." *ActiveVideo Networks, Inc. v. Verizon Communications, Inc.*, 694 F.3d 1312, 1333 (Fed. Cir. 2012). Accordingly, Mr. Malackowski's use of allegedly incomparable prior licenses to calculate a royalty rate is an issue for cross-examination, not an issue for exclusion under *Daubert*.

F.

²⁰ The prior licenses between Aduna—the original patent holder—and two other companies did not actually grant any rights with respect to the patents-in-suit; instead, both licenses gave rights to a complete and operational product and related services, not a patent. Furthermore, both licenses ended in failure.

Finally, Facebook argues the ultimate royalty rate chosen, 5-6%, is arbitrary. Mr. Malackowski explained the final rate of 5-6% by stating it was the product of “the totality of the information available to me under my *Georgia-Pacific* analysis.” Although Mr. Malackowski did not give the exact numerical source of the final 5-6%, there is no indication that the methodology used by Mr. Malackowski in arriving at his final 5-6% royalty rate is unreliable. The expert applied the *Georgia-Pacific* factors to the upper and lower bounds of the royalty rate, articulating with particularity why each factor favored the licensor, the licensee, or neither, and thus why “the application of any one or all of those factors would permit an increase in the base royalty rate.” *ePlus, Inc. v. Lawson Software, Inc.*, 764 F.Supp.2d 807, 815 (E.D. Va. 2011). Facebook does not contend that the *Georgia-Pacific* factors were applied incorrectly. Accordingly, any argument with Mr. Malackowski’s final calculation of the royalty rate based on his application of the *Georgia-Pacific* factors is an issue of weight for cross-examination before the jury.

IV.

In sum, Mr. Malackowski’s expert report on damages is inadmissible under Rule 702 and the standards set forth in *Daubert* because the determination of both the royalty base and the royalty rate was flawed. Mr. Malackowski’s report failed to apportion revenue to BigPipe and Audience Symbol, the features actually causing Facebook to allegedly infringe. Accordingly, Rembrandt’s expert report claims more than the contribution of the claimed invention, and thus claims more damages than adequate to compensate for the alleged infringement. Accordingly, Mr. Malackowski’s damages report must be excluded, and under Rule 26, Fed. R. Civ. P., Mr. Malackowski’s testimony based on his damages report must also be excluded.

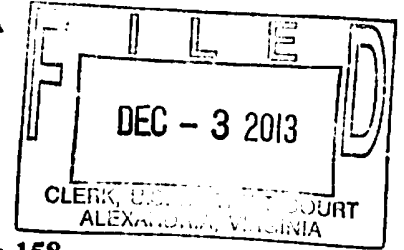
An appropriate order will issue.

Alexandria, Virginia
December 3, 2013



T. S. Ellis, III
United States District Judge

IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF VIRGINIA
Alexandria Division



REMBRANDT SOCIAL MEDIA, LP,
Plaintiff,

v.

FACEBOOK, INC.,
Defendant.

Case No. 1:13-cv-158

ORDER

The matter came before the Court on defendant's motion to exclude the testimony of James E. Malackowski (Doc. 239). The matter has been fully briefed and argued.

For the reasons stated in the Memorandum Opinion of even date,¹ and for good cause,

It is hereby **ORDERED** that defendant's motion is **GRANTED**. Mr. Malackowski's expert damages report and testimony is excluded under Rule 702, Fed. R. Evid., and *Daubert v. Merrell Dow Pharmaceuticals, Inc.*, 509 U.S. 579 (1993).

The Clerk is directed to send a copy of this Order to all counsel of record.

Alexandria, Virginia
December 3, 2013



T. S. Ellis, III
United States District Judge

¹ Both a sealed Memorandum Opinion and a redacted Memorandum Opinion have been filed. The two small redacted portions of the Memorandum Opinion pertain to defendant's revenue and the total amount of damages requested by plaintiff.

(12) **United States Patent**
Van Der Meer

(10) **Patent No.:** **US 6,415,316 B1**
(45) **Date of Patent:** **Jul. 2, 2002**

(54) **METHOD AND APPARATUS FOR
IMPLEMENTING A WEB PAGE DIARY**

(75) Inventor: **Joannes Jozef Everardus Van Der
Meer**, Amersfoort (NL)

(73) Assignee: **Aldministrato Nederland B.V.**,
Amersfoort (NL)

(*) Notice: Subject to any disclaimer, the term of this
patent is extended or adjusted under 35
U.S.C. 154(b) by 0 days.

(21) Appl. No.: **09/144,655**

(22) Filed: **Sep. 1, 1998**

(51) **Int. Cl.**⁷ **G06F 15/177**; G06F 13/38

(52) **U.S. Cl.** **709/203**; 709/217; 705/8;
707/501; 707/513; 707/526; 713/166; 713/167

(58) **Field of Search** 713/166, 176,
713/183, 170, 201, 178, 167; 364/40; 395/200;
705/26, 8, 9; 709/213, 202, 203, 220, 221,
222, 217, 218, 219; 707/7, 501, 500, 512,
513, 526, 9

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Primary Examiner—Mark H. Rinehart

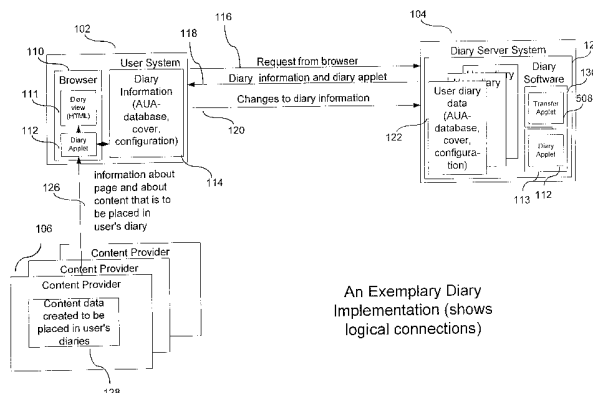
Assistant Examiner—William C. Vaughn, Jr.

(74) *Attorney, Agent, or Firm*—Fenwick & West LLP

(57) **ABSTRACT**

A method and apparatus to create a "diary" containing multimedia references to contents of Websites. These references (also called addresses) can be to, for example, text, bookmarks, images, programs, movies, etc. Many content objects are provided via the Websites of "content providers," with the specific intent of making the content objects available to a user to place in his diary. Each diary page has a format specified by a cover. The cover is provided by a cover provider and specifies where on the diary page the diary owner can place his content. The name "diary" arises because the invention preferably allows the user to save these references in association with dates and/or times. The pages of a user's diary may be navigated like a book, moving forward and backward through the pages or jumping to a particular page. In addition to storing references to Web information, the user can also jot down reminders, enter appointments, and birthdays, etc. for dates. A user is allowed to choose a visual "theme" for the pages of his diary. This theme can be changed at any time by the user and reflects how the user wants to present himself and his diary to the world. The user can set various levels of privacy for different portions of his diary.

39 Claims, 23 Drawing Sheets



An Exemplary Diary
Implementation (shows
logical connections)

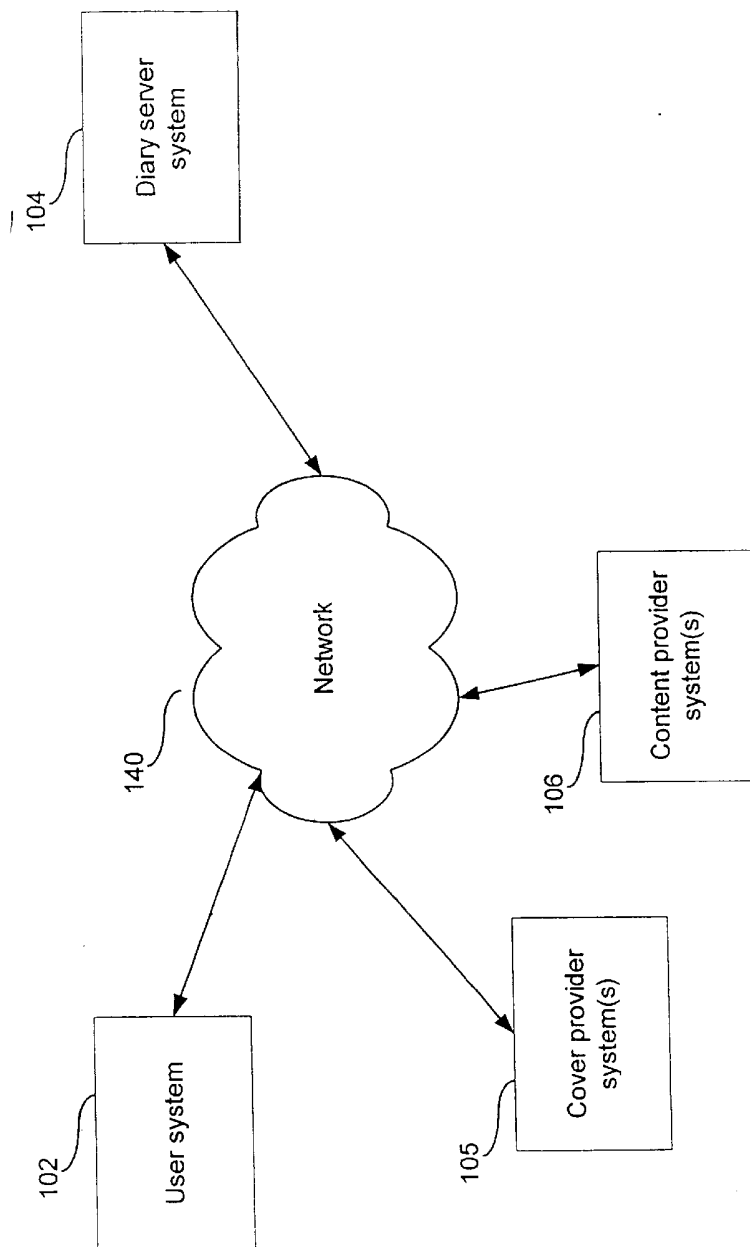


Fig. 1(a)
Exemplary
physical
connections

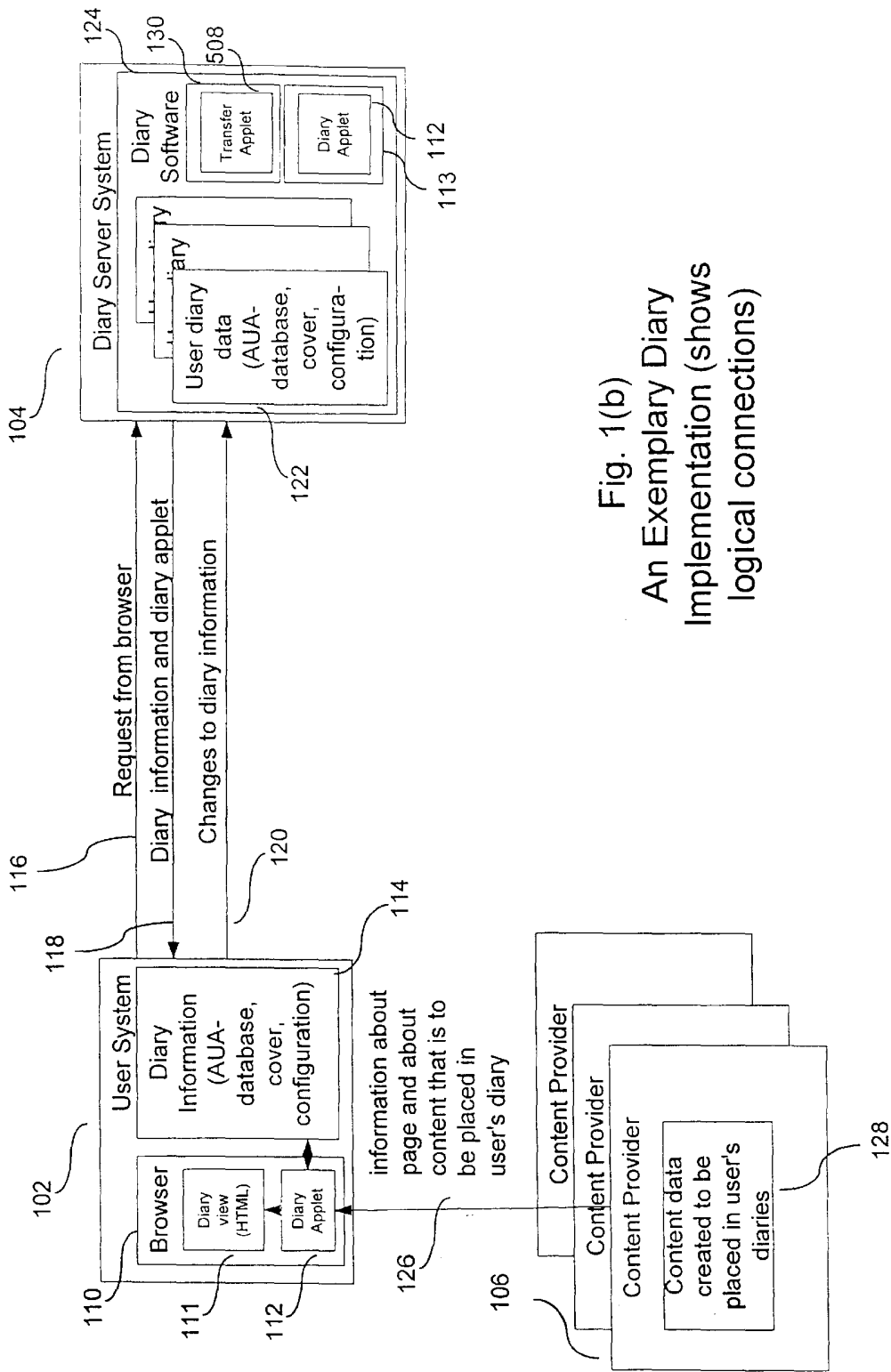


Fig. 1(b)
An Exemplary Diary
Implementation (shows
logical connections)

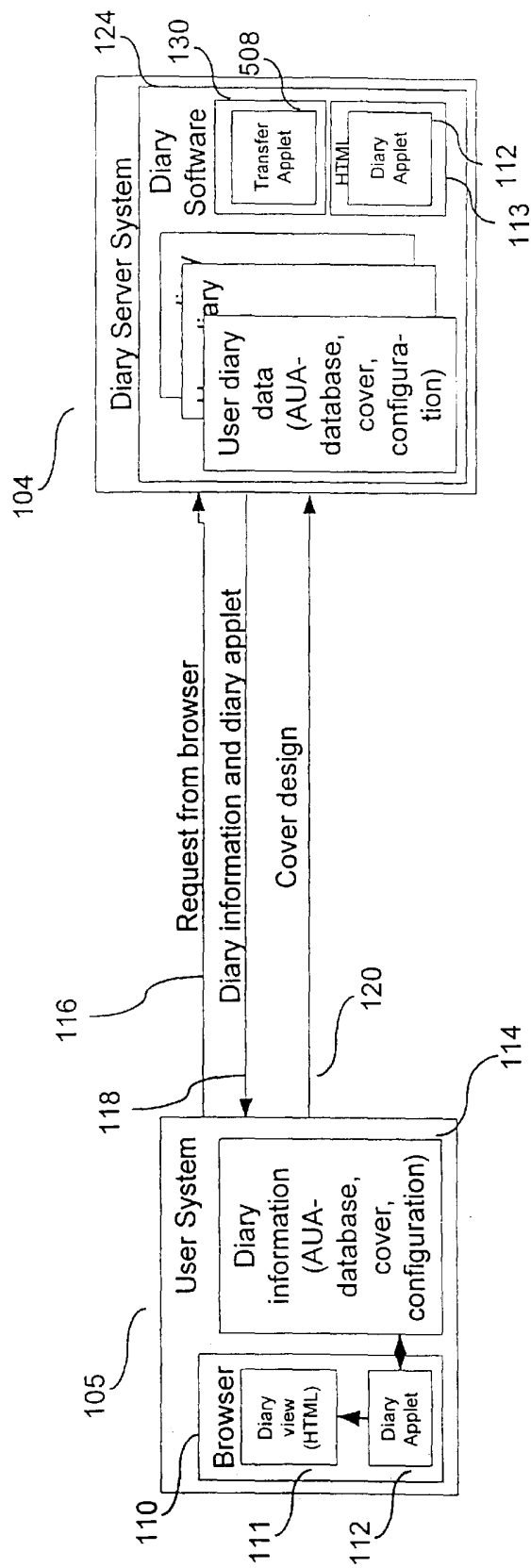


Fig. 1(c)
An Exemplary Diary
Implementation (shows
logical connections)

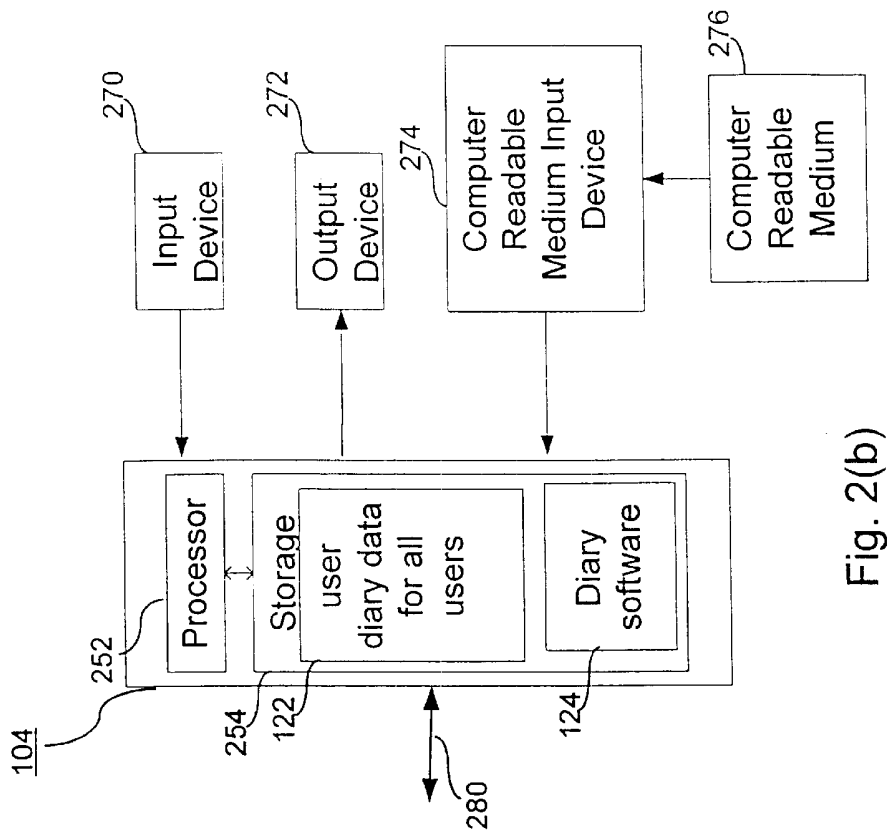


Fig. 2(b)

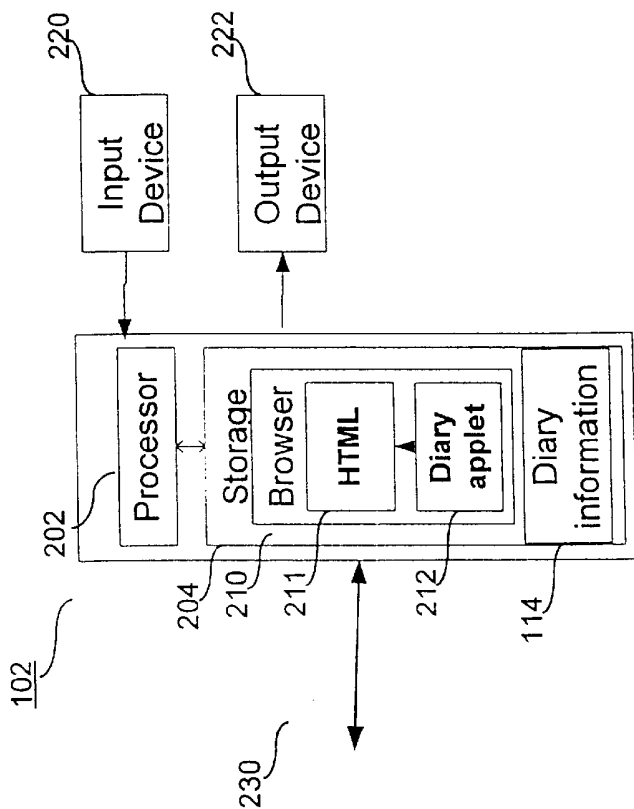
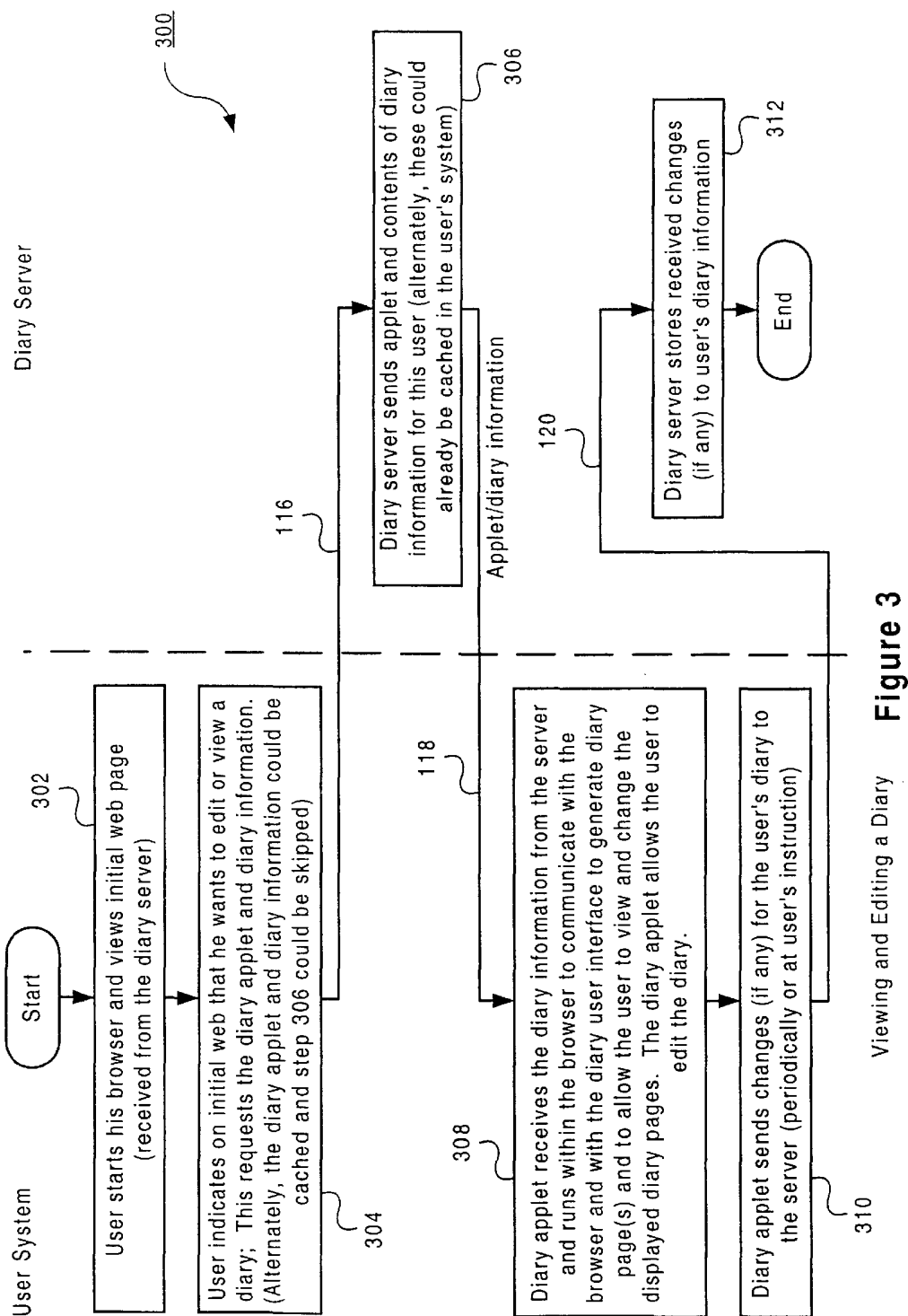


Fig. 2(a)



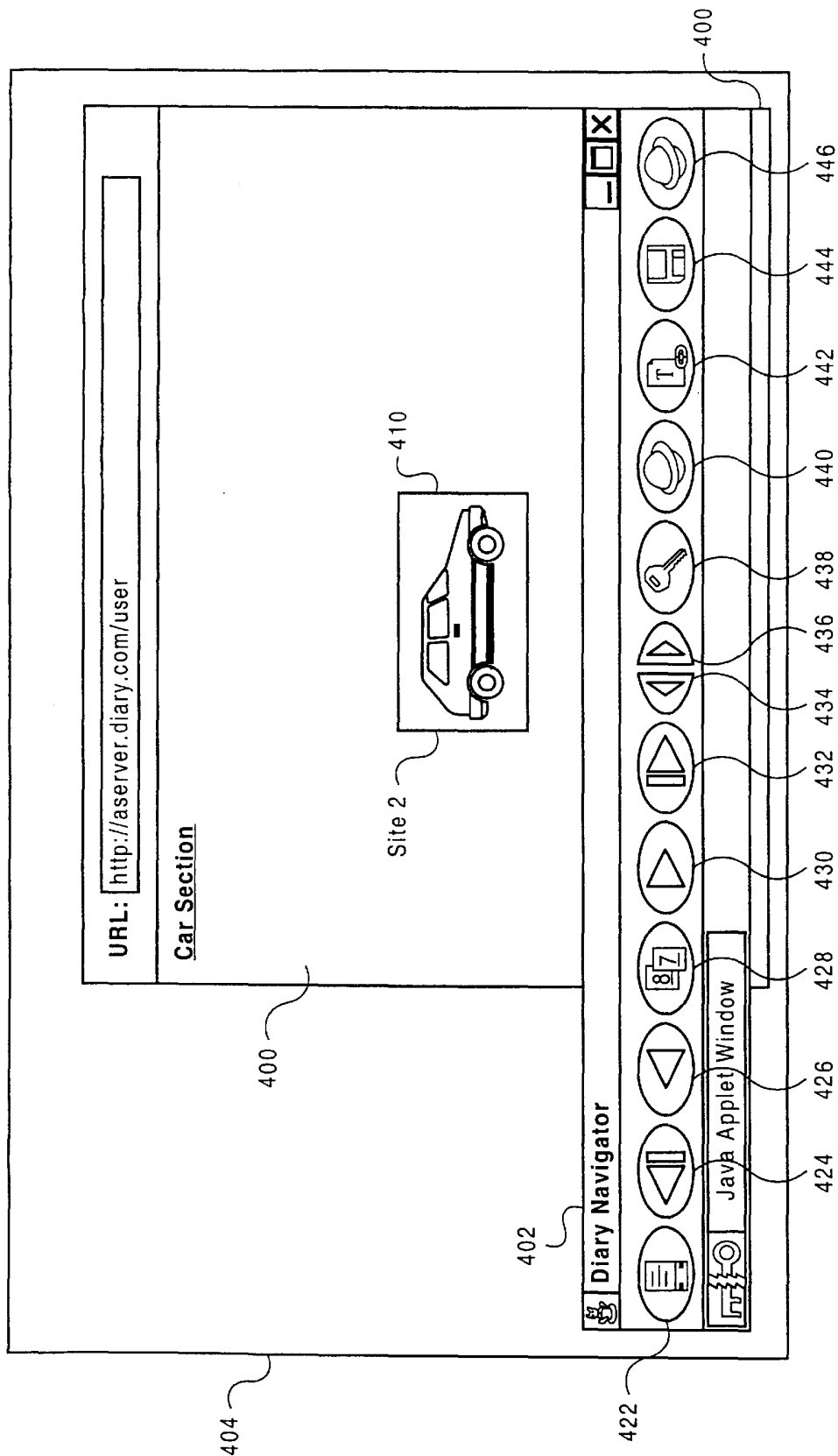


Figure 4(a)

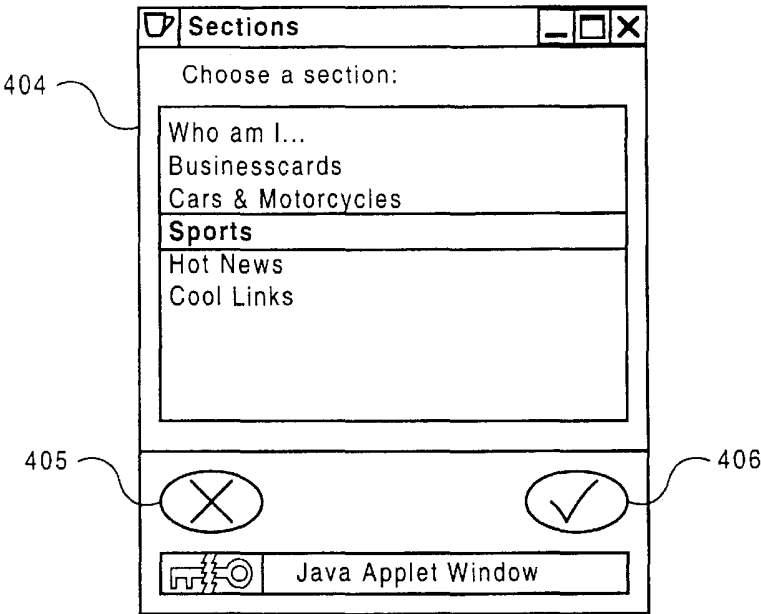


Figure 4(b)

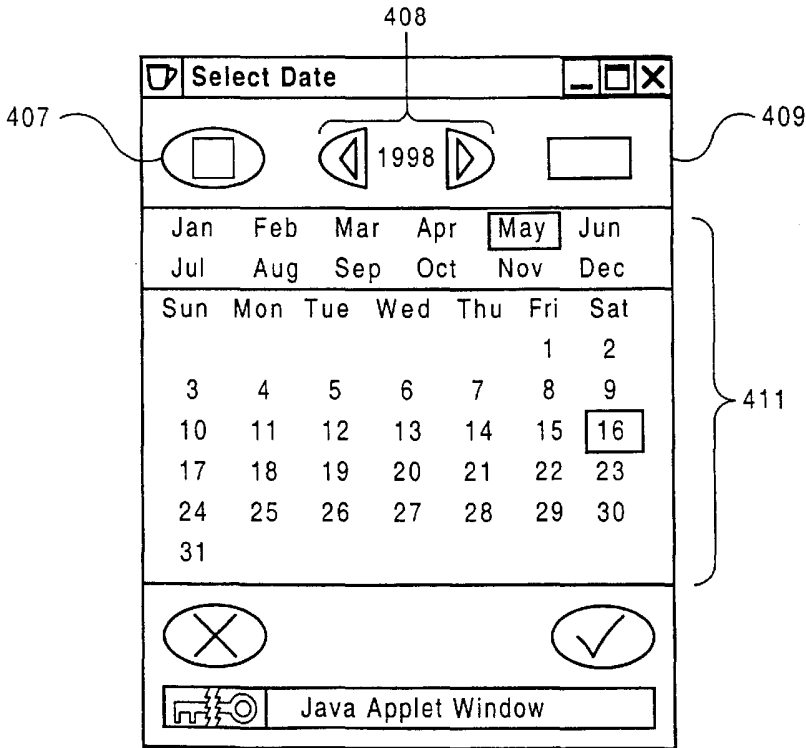


Figure 4(c)

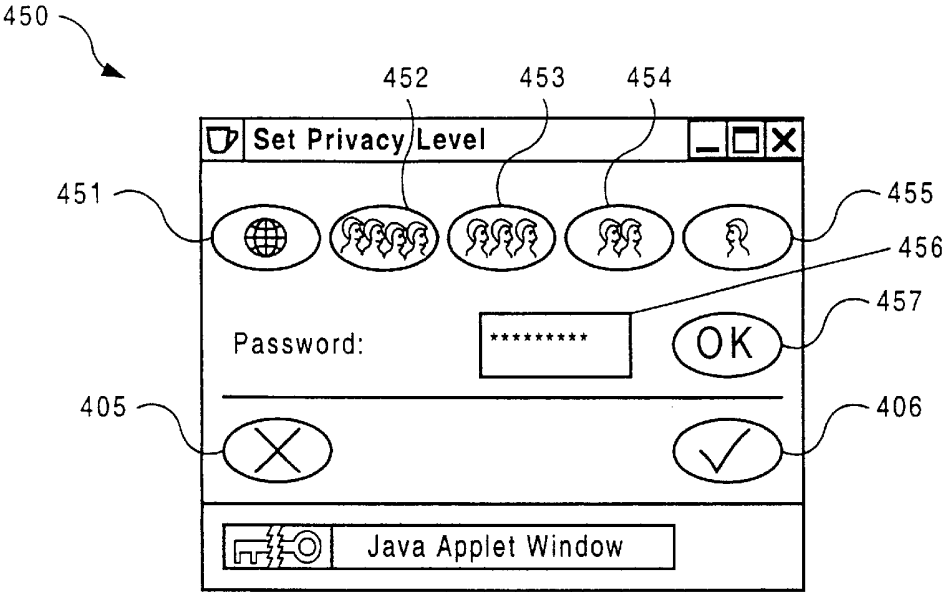


Figure 4(d)

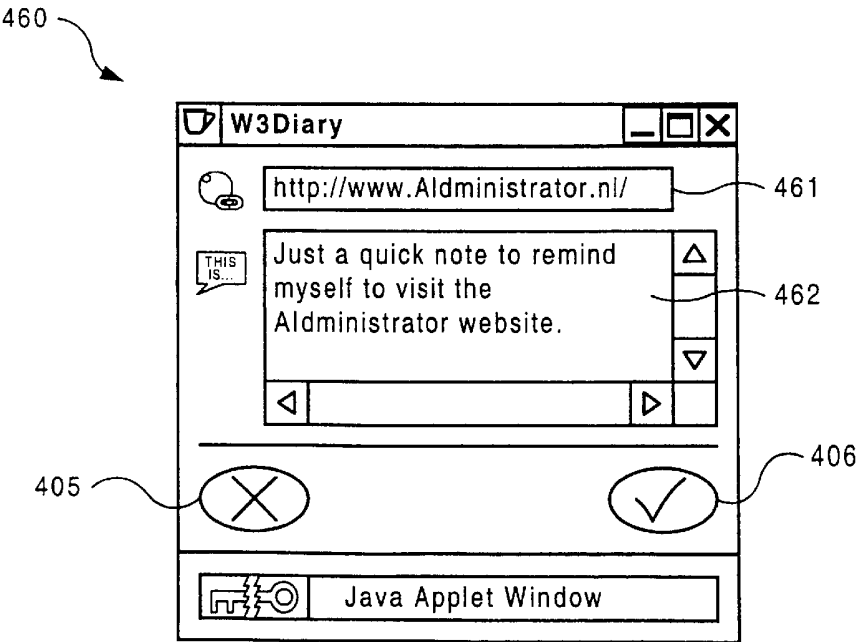


Figure 4(e)

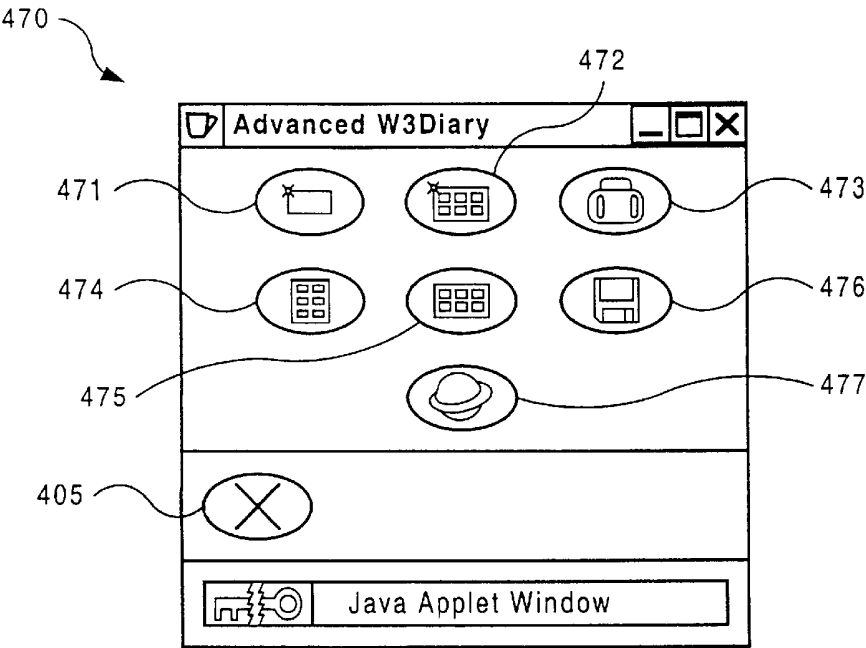


Figure 4(f)

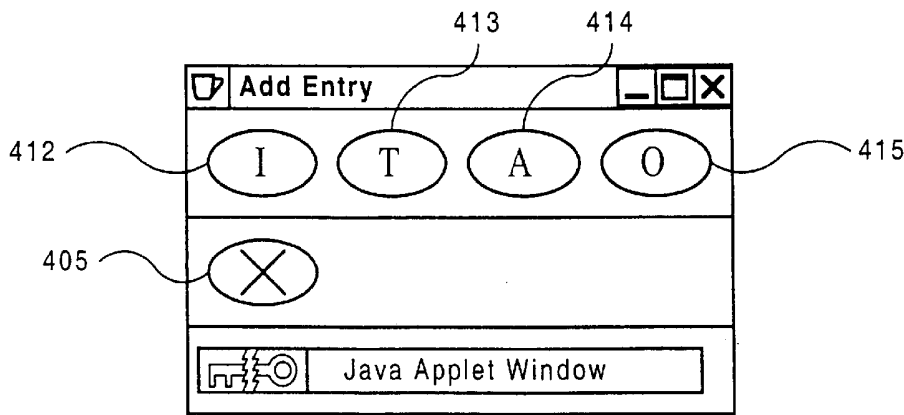


Figure 4(g)

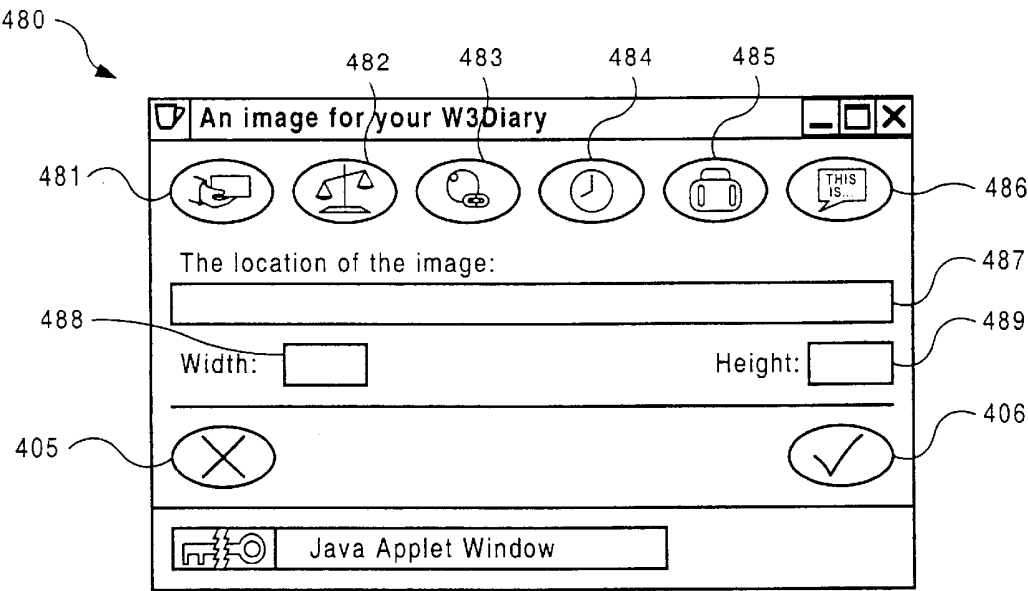


Figure 4(h)

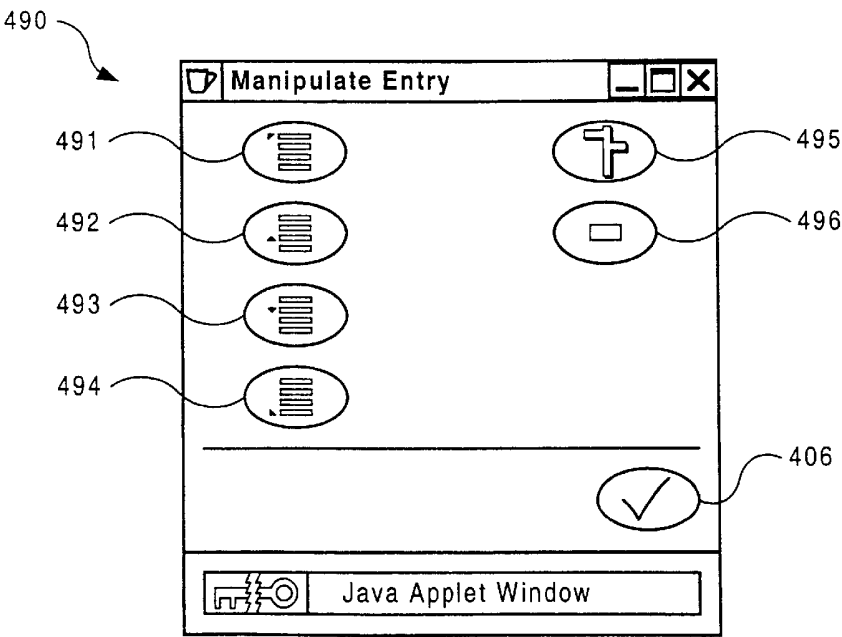


Figure 4(i)

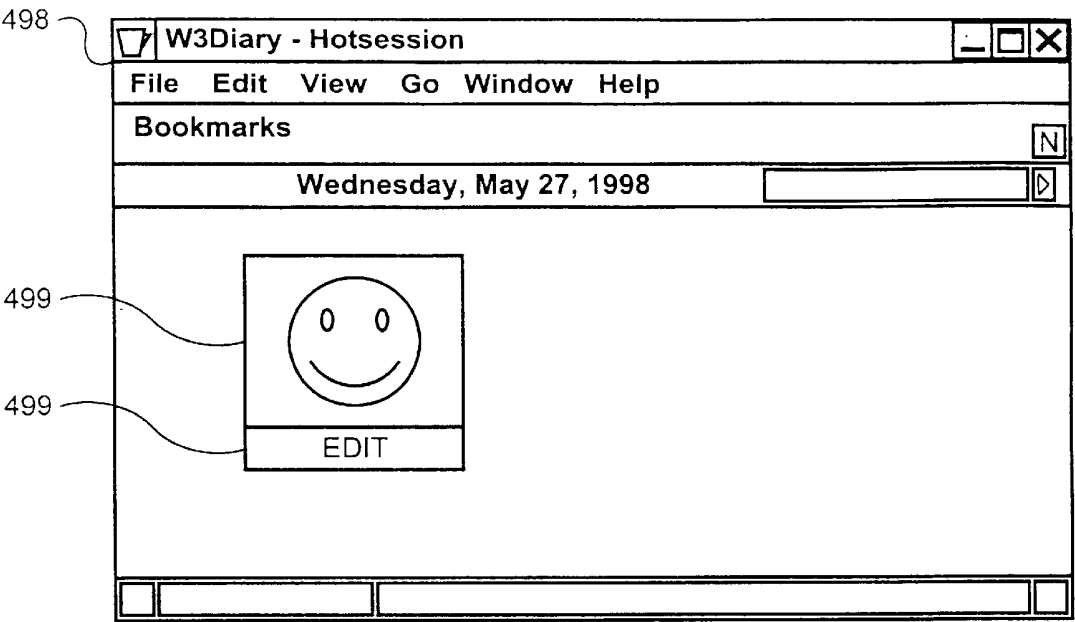


Figure 4(j)

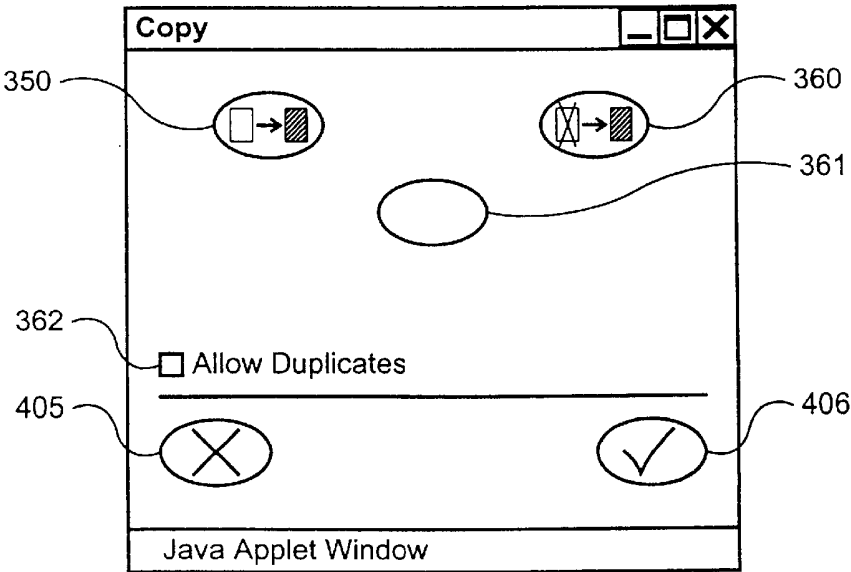
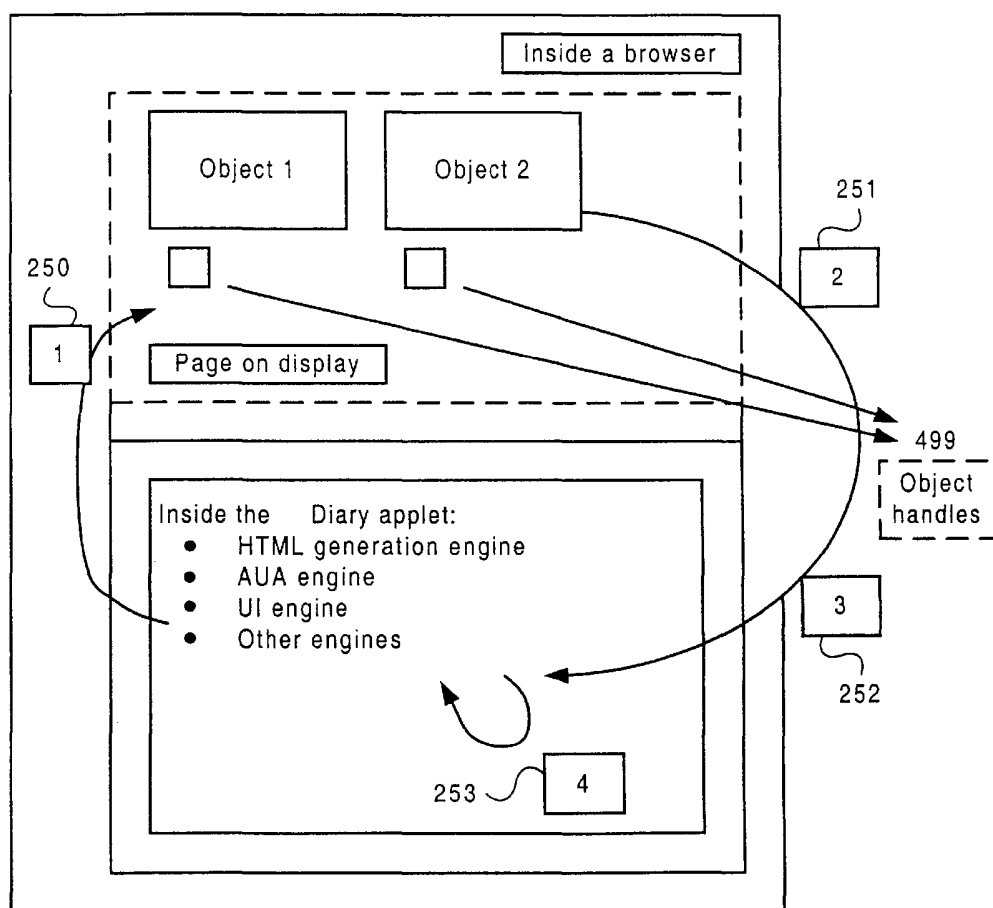


Figure 4(k)

Flowchart

The above operations are implemented through control by means of dynamic HTML generation. A flowchart is given below in figure 11.

- By setting the W3Diary in edit mode, the HTML generator re-generates the page and adds object control handles (in this case of type "edit") to the page
- The user clicks on a control handle. The handle identification is passed on to the HTML generation engine (by JavaScript in the current embodiment)
- Any appropriate action is executed on the object identified by the handle and represented in HTML
- Finally, a new (updated) page is generated and displayed.



HTML Control (Editing content)

Figure 4(I)

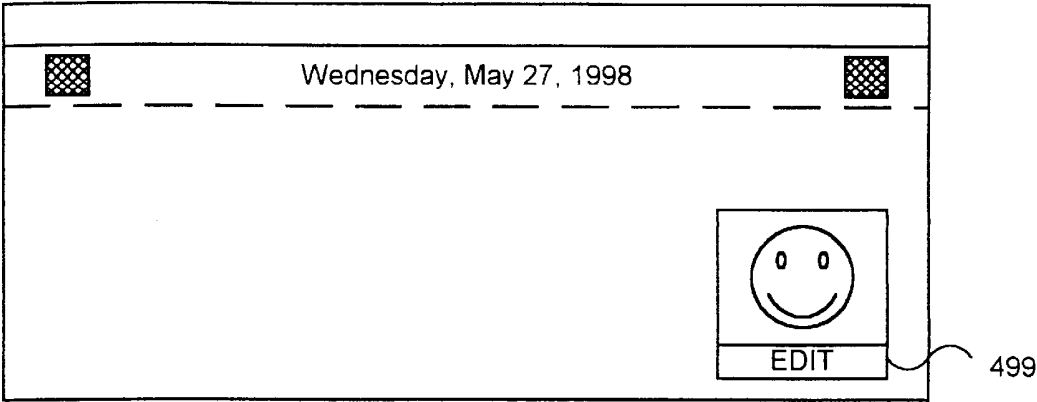


Figure 4(m)

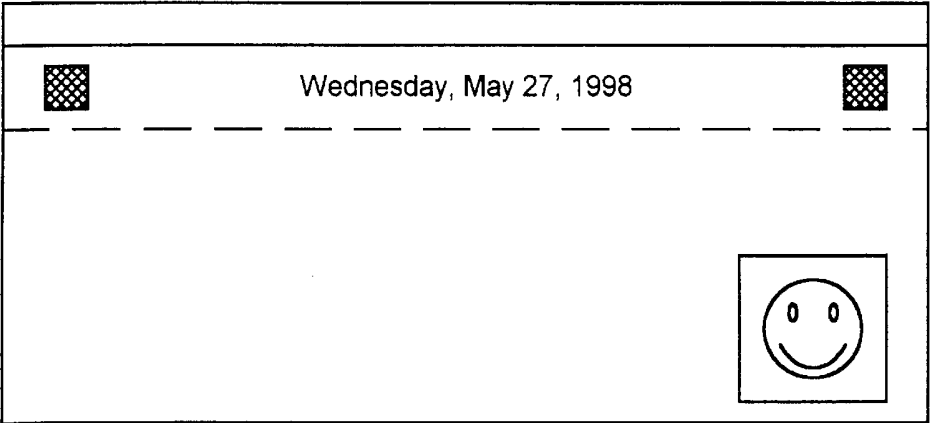


Figure 4(n)

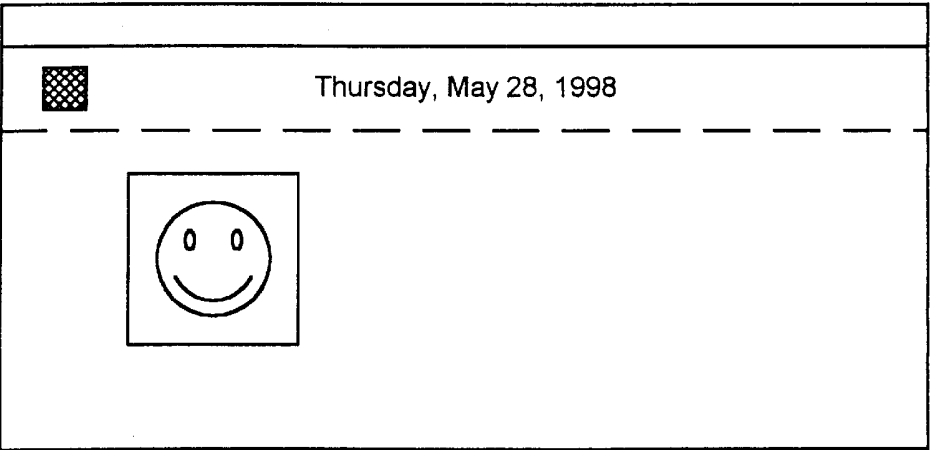
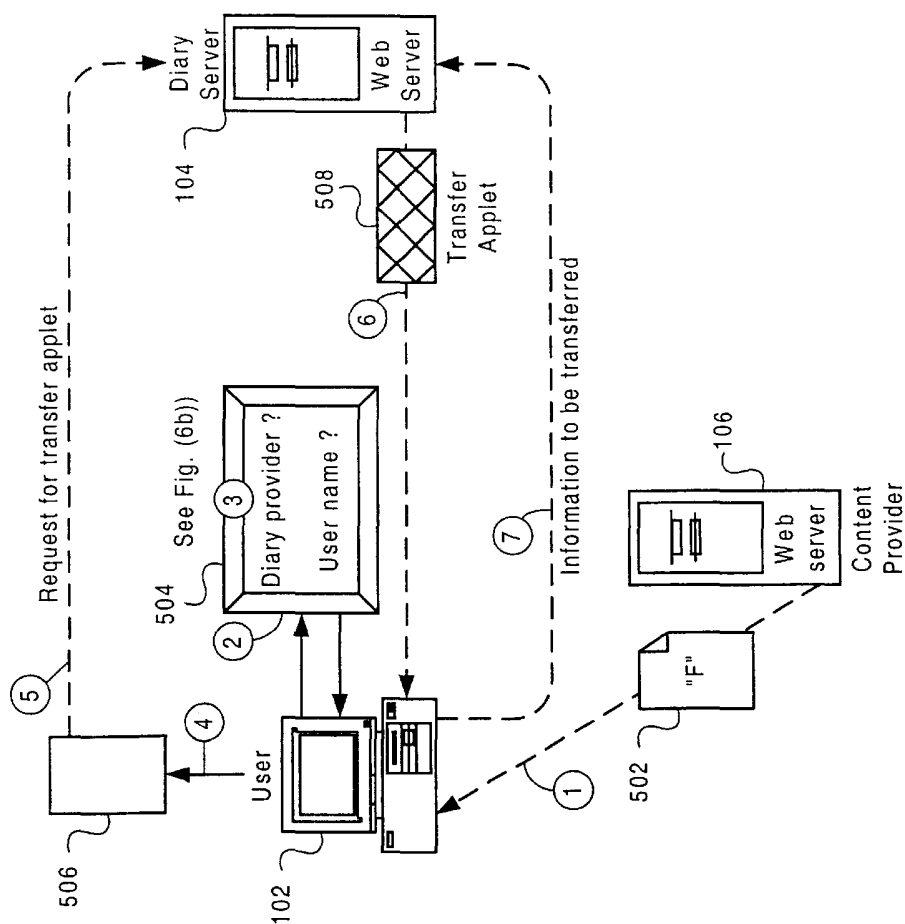
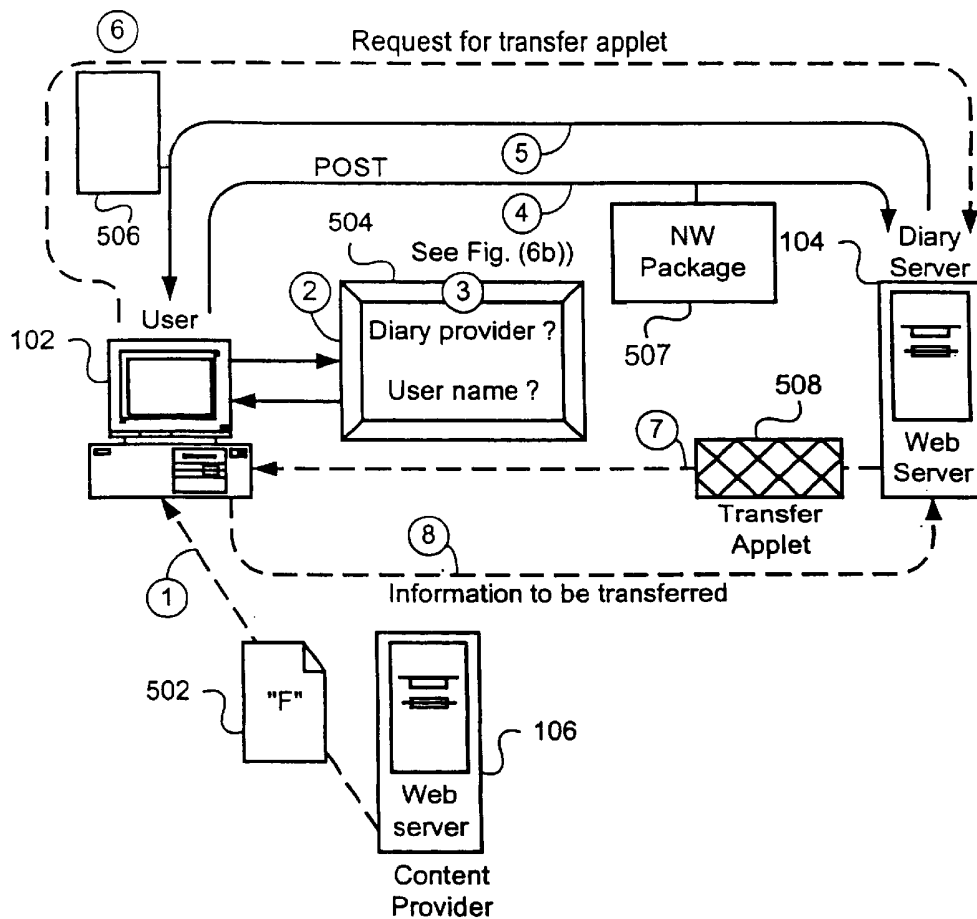


Figure 4(o)



Content Transfer
Figure 5(a)



Content Transfer
Figure 5(b)

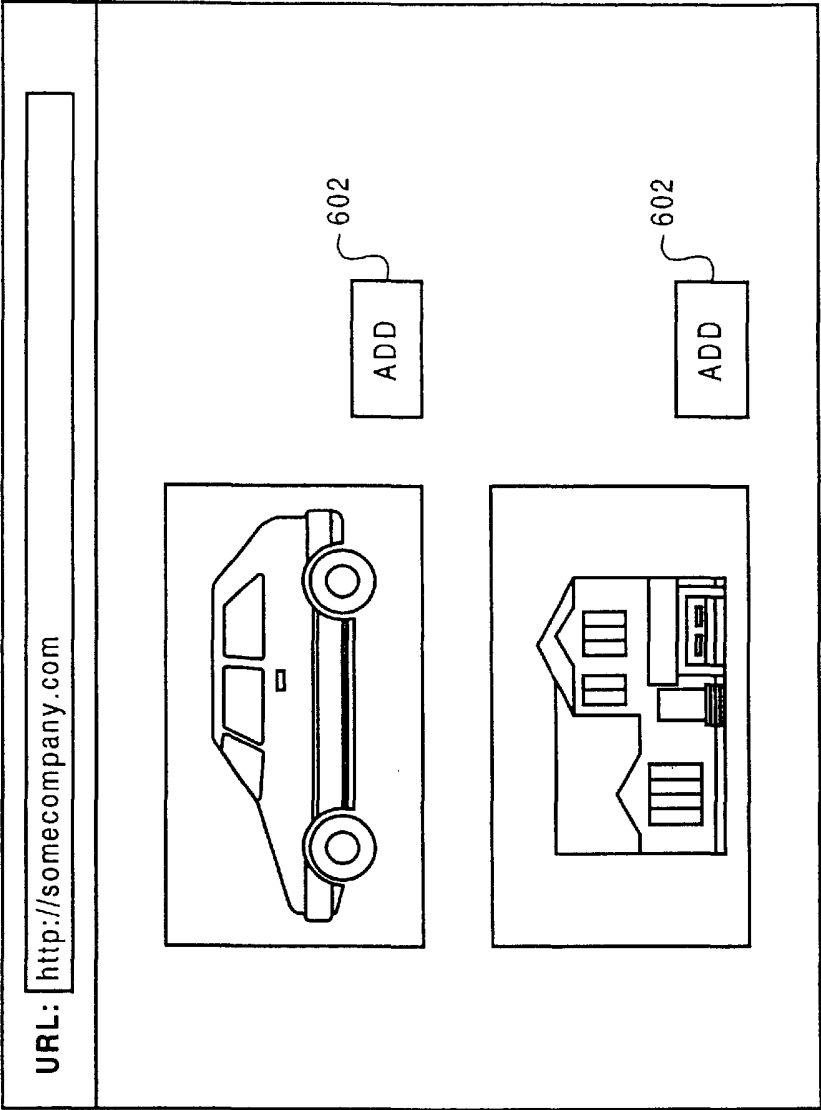


Figure 6(a)

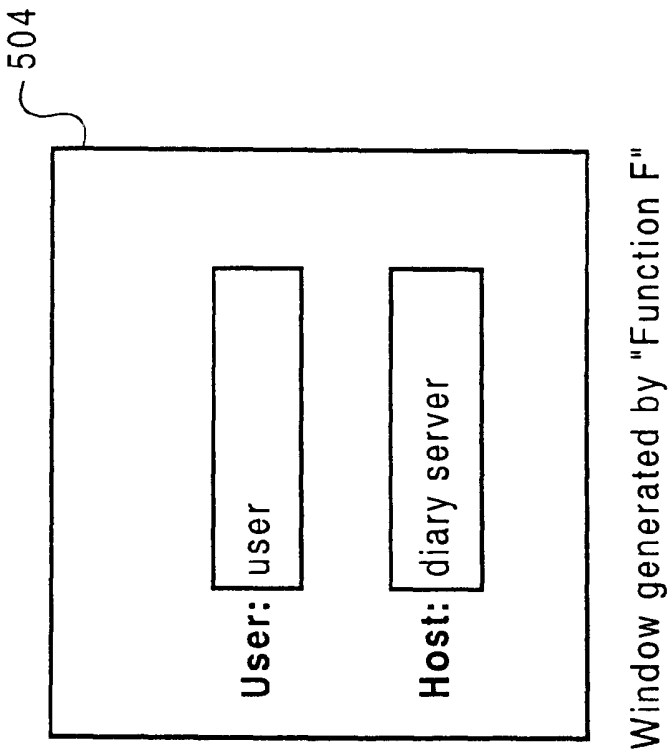


Figure 6(b)

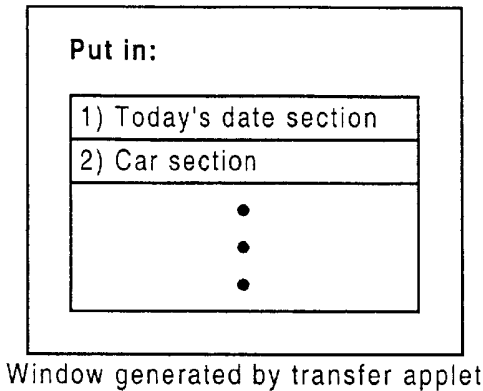


Figure 7(a)

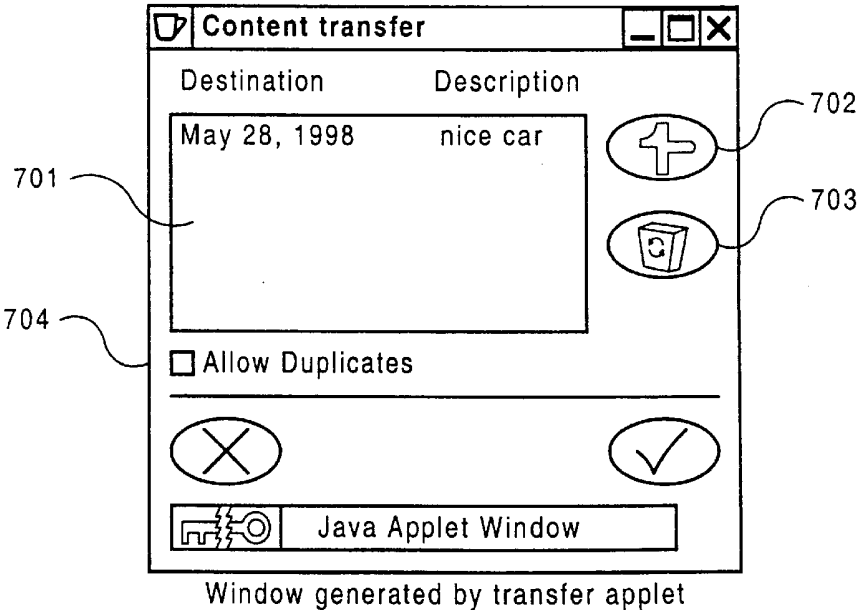
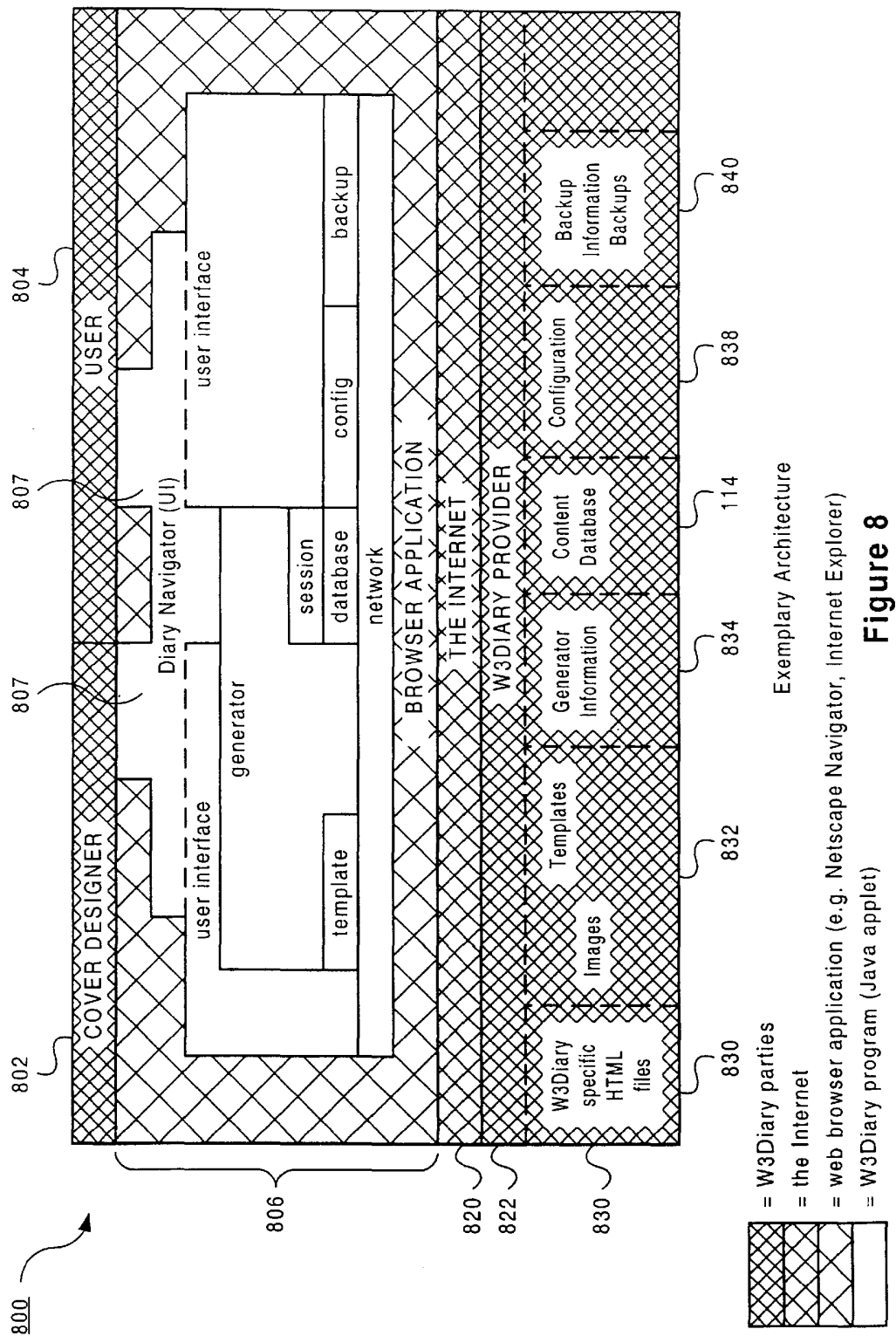


Figure 7(b)



Cover-specific files:

These files are provided by cover designers.

<ul style="list-style-type: none">• Diary specific HTML-files. These files are shown in the browser at times the Diary is in some non-interactive state (e.g. while the Diary is starting up).
<ul style="list-style-type: none">• Images. A cover designer can provide images for the Diary user interface. For example, cover-specific graphics for the buttons in the user interface may be provided.
<ul style="list-style-type: none">• HTML templates. These files specify the layout of the Diary pages.
<ul style="list-style-type: none">• Generator configuration file. This file contains information for the generator about the mapping of templates to Diary pages. It is created using "Instant Cover", Diary's integrated cover design tool.

Figure 9**User-specific files:**

These files contain each W3Diary's user specific data:

<ul style="list-style-type: none">• AUA-Database. The content database contains the contents of a user's Diary.
<ul style="list-style-type: none">• Config. This file contains the user settings (see Config, above).

Figure 10

AUA-Database

The Diary's content database contains the content a user has gathered. This content comes in many types, but since it should be viewable in an HTML-browser, the distinction between content types used by HTML will be adopted. HTML supports these four types of content:

- plain text
- images
- applets
- embedded objects

Each content entry is shown on one specific Diary section, so the database stores the content on a per-section basis. As there are two kinds of sections (date sections and named sections), this structure is a little more refined.

The following diagram shows the structure of the content database:

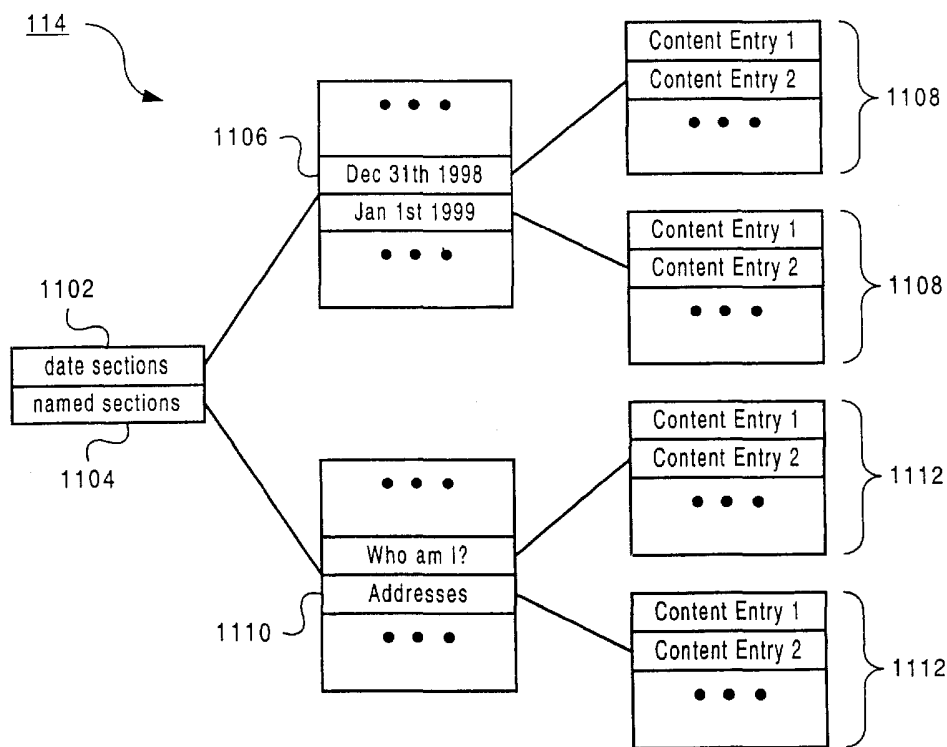


Figure 11

Template HTML-files

To specify the layout of the generated HTML-pages, the Generator uses HTML-templates.

Each HTML-templates uses the following Diary conventions that allow on-the-fly tailoring of the files:

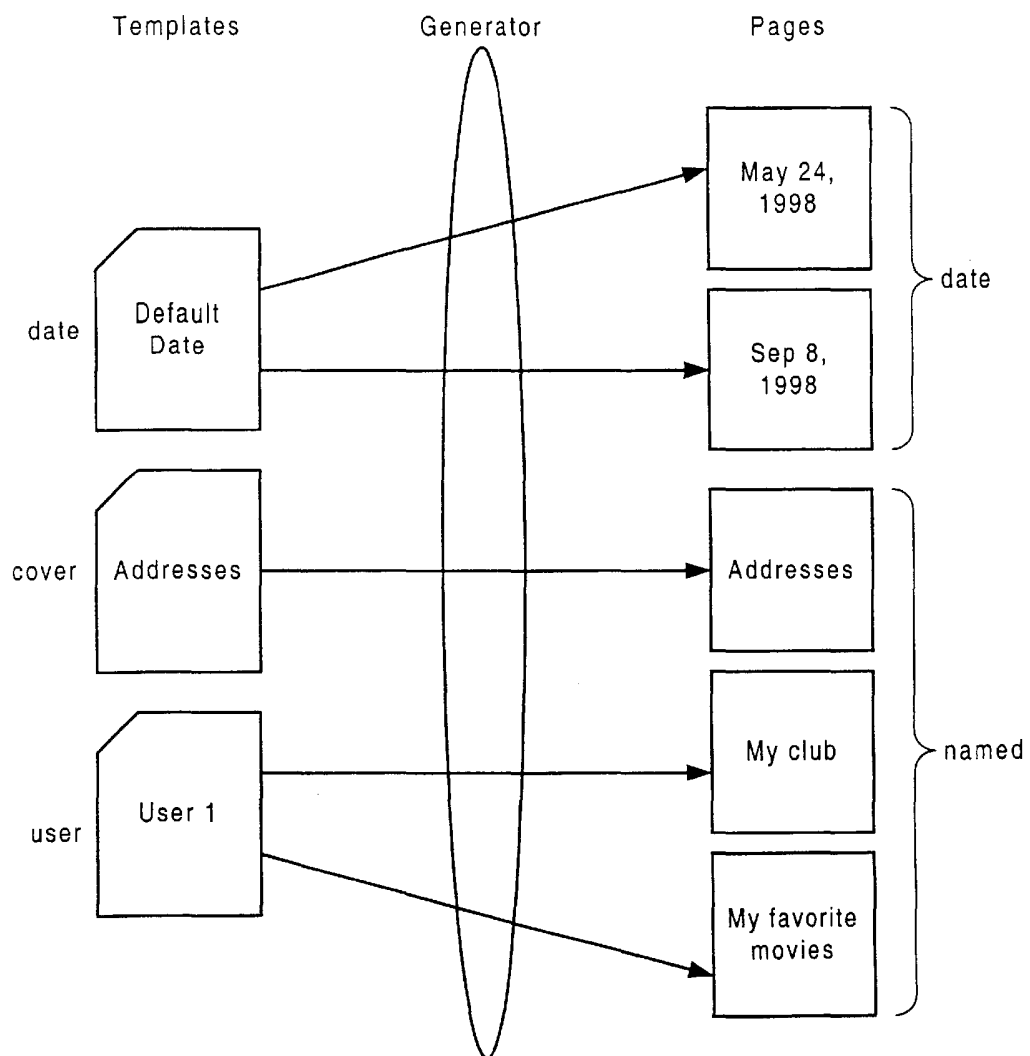
1. Each image in the HTML-template named wifentry.gif is a placeholder for an entry; in W3Diary terms, each wifentry.gif represents a **box**.
 1. The dimensions of the wifentry.gif in the original HTML-template will determine the bounding box of an entry.
 2. The cover designer can indicate that the bounding box may be rotated by 90 degrees if that improves the fit.
2. Boxes must be inside an HTML table in order to allow correct generation of content surrounded by edit or provide images.
3. For pages in 'date' sections, each box should be accompanied by a time generator tag so that time information attached to a content entry can be visualized.
 1. While viewing the template, each time generator tag should be close to its box.
 2. In the HTML-file, the order of the list of the `_TIME_` generator tags should be the same as the order of the list of the corresponding wifentry.gif's.
 Note: this results in HTML table designs in which the time generator tags are above (or below) each corresponding box. You *cannot* alternate the place (above/below) of the time generator tag with respect to its corresponding box. For, by doing that, the sequence of the time generator tags is not the same as the sequence of the boxes.
4. Optionally, include at any spot and in any context one or more of the following generator tags:

Generator Tag	Substituted By	Example Value
<code>_SECTION_</code>	the name of the section	Addresses
<code>_DATESTRING_</code>	the date	March 13, 1998
<code>_YEAR_</code>	the year	1998
<code>_MONTH_</code>	the month	3
<code>_MONTHNAME_</code>	the month	March
<code>_DAY_</code>	the day of the month	13
<code>_WEEKDAY_</code>	the day of the week	Friday
<code>_TIME12_</code>	the time of an entry in am/pm	9:30 pm
<code>_TIME24_</code>	the time of an entry, 24 hour based	21:30
<code>_PAGE_</code>	the number of the current page within a section	2
<code>_MAXPAGE_</code>	the total number of pages in a section	5

Figure 12

Instant Cover

The individual template HTML-files are bound (like pages in a book). The "priority sequence" of these HTML-templates plus any other (meta-)information about those HTML-templates is stored in a file. This file is called w3diary.wif (WIF stands for "W3Diary Intermediate Format"). The Generator uses the WIF file to match templates to a W3Diary section.



The WIF object is used to configure the Generator. The Generator consists of multiple ordered sets of Templates (which have their own variables) and of global variables. So the WIF object is just an efficient representation of the Generator.

Figure 13

US 6,415,316 B1

1

METHOD AND APPARATUS FOR IMPLEMENTING A WEB PAGE DIARY

RELATED APPLICATIONS

This application is related to the following applications, filed concurrently herewith, each of which is incorporated herein in its entirety.

1. U.S. patent application Ser. No. 09/244,789, entitled "Method and Apparatus for HTML Control" by van der Meer.

2. U.S. patent application Ser. No. 09/144,717, entitled "System and Method for Generating, Transferring and Using an Annotated Universal Address" by van der Meer.

3. U.S. patent application Ser. No. 09/144,893, entitled "Method and Apparatus for Communicating With a Server" by van der Meer.

BACKGROUND OF THE INVENTION

The present invention relates generally to computer networks and, specifically, to a method and apparatus for implementing a "diary" of Web pages or the like on a computer network.

In recent times, the Internet has gained universal acceptance. A global network connecting millions of computers, the Internet is the current "ultimate" in information and communication technology. Still, it has quite a few drawbacks. Some drawbacks, such as its speed (or lack thereof) are readily apparent to the casual user. Other problems are not as obvious.

A first problem is the facelessness of the Internet. In real life, we (consciously or unconsciously) "judge a book by its cover," i.e., we form an opinion about other people based on how they present themselves, through their style of clothing, the car they drive, their hobbies and interests, and the people they admire or detest. Non-technical users of the Internet find it difficult to present themselves, other than what they say in newsgroups, etc. Technically-minded users have some ability to present themselves through their Websites. However, setting up and maintaining a Website requires more knowledge and effort than many users possess. To design a good personal Website a user needs to know about such areas as computer science, human-computer interface design, graphic design, fine art, and writing. It is obvious from many examples available on the Web today that not all users have all of these skills in equal proportions. As such, the Internet is essentially a faceless medium.

A second problem with the Internet is its volatility. While browsing the World Wide Web, users encounter huge amounts of information. In the real world, when we visit a place, we take home a tangible memory of the place, such as photographs or souvenirs. Web users do not have this option. Current mechanisms for saving references to Web pages (e.g., bookmarks and favorite lists) have the large drawback of being text-oriented and, therefore, provide no visual (or other) clue as to why the user originally thought the information was interesting enough to bookmark. The only memories a Web user has of the sites he has visited are some rather inexpressive bookmarks that say something like "Welcome to the homepage of SomeCompany" or "http://www.somecompany.com/". Such bookmarks give no sensory clue as to why the user bookmarked the page in the first place. Thus, a user's travels on the Web are rather volatile, since he has nothing tangible by which to remember where he has gone. What is needed is a way for users to keep track of locations that they have visited in a more visual and memorable way.

2

SUMMARY OF THE INVENTION

The present invention allows a user to create a "diary" containing multimedia references to Websites. These references (also called "content objects" or "objects") can be addresses or URLs of, for example, text, bookmarks, images, programs, movies, etc. Many content objects are provided via the Websites of "content providers," with the specific intent of making the content objects available to a user to place in his diary. Other content objects can be copied from the diaries of other users. Still other content objects are entered by the diary owner himself.

The term "diary" arises because the invention preferably allows the diary owner to save these references in association with dates and/or times. Thus, at least part of the user's diary will likely organize information about Web pages (and other types of information specified by the diary owner) by dates. Other parts of a diary organize data according to type of data, having a diary page for such types of information as "recipes," telephone numbers, favorite Websites, etc. The pages of a user's diary may be navigated like a book, moving forward and backward through the pages or jumping to a particular page. In addition to storing references to Web information, the diary owner can also jot down reminders, enter appointments, and birthdays, etc. for dates.

A diary owner is allowed to choose a visual "theme" for the pages of his diary. This theme can be changed at any time by the diary owner and reflects how the diary owner wants to present himself and his diary to the world. A theme is reflected in a "cover" of a user's diary and in the design and general layout of the pages in the user's diary. These themes and covers are generally designed by professional graphics artists and provide an opportunity for revenue via the placement on the cover of ads or graphics associated with a particular company or product. In fact, the ultimate "ads" cover may be created when a single company creates a cover as an ad for itself. The company pays a licensing fee for the ability to provide a cover and for the right to be mentioned in a list of possible covers.

The diary owner can set various levels of privacy for different portions of his diary. Thus, certain portions of the diary (for example, a daily entry or a reminder list) can be viewed only by the diary owner, while other portions of the diary can be viewed by anyone with a Web browser. Thus, a diary owner may organize all or part of his diary to present an image of himself to the world.

The present invention allows "content providers" to place content ("souvenirs") on their Web page. Diary owners can then download a reference to the content into their personal diaries. When a user views the Web page of a content provider, he can choose to add one or more pieces of content offered on the Web page to his diary. A downloadable content object on a content provider Website has an associated executable program, such as a JavaScript, to aid in placing a reference to the content into the diary as discussed below in connection with FIGS. 5(a) and 5(b).

The diary owner can edit existing diary content and layout by entering an edit mode, which allows the owner to move and copy pieces of the content of a diary page, either within the page or to another page. A Diary applet regenerates the page to reflect the editing changes and passes it to the browser for display.

The Java execution environment implements certain security restrictions for Java applets. All Java parts of the diary embodiment are implemented as applets, so these security restrictions apply. Specifically, a Java applet that was loaded from server machine 104, onto user machine 102 to com-

US 6,415,316 B1

3

municate with a different machine, such as content provider machine 106, can be problematic. Similarly, most Java execution environments do not allow Java applets to read, write, create, delete, or otherwise modify or examine the local file system. The first limitation raises problems when a diary owner wants to use content provided by a third party. Use of such content is described in detail in copending U.S. patent application Ser. No. 09/144,717, entitled "System and Method for Generating, Transferring and Using an Annotated Universal Address" by van der Meer.

The described embodiments of the present invention provide an implementation of the transfer function to save data from a third party provider between the diary applet (in the owner system) and the diary server (which stores diary data) that overcomes this restriction. While the three machines are typically separate, this method works even when one or more of the machines are the same. This transfer mechanism is not limited to diary applications and is usable in various other circumstances, such as whenever an executable program loaded from a first machine to a second machine needs to communicate with a third machine.

Advantages of the invention will be set forth in part in the description which follows and in part will be obvious from the description or may be learned by practice of the invention. The objects and advantages of the invention will be realized and attained by means of the elements and combinations particularly pointed out in the appended claims and equivalents.

BRIEF DESCRIPTION OF THE DRAWINGS

The accompanying drawings, which are incorporated in and constitute a part of this specification, illustrate several embodiments of the invention and, together with the description, serve to explain the principles of the invention.

FIG. 1(a) is a block diagram showing exemplary physical connections between elements of a system in accordance with an embodiment of the present invention.

FIG. 1(b) is a block diagram of a computer network in accordance with an embodiment of the present invention, showing how a user's diary is viewed or edited.

FIG. 1(c) is a block diagram of a computer network in accordance with an embodiment of the present invention, showing how a content provider creates a diary cover.

FIG. 2(a) is a block diagram of a data processing system acting as a diary owner system.

FIG. 2(b) is a block diagram of a data processing system acting as a diary server.

FIG. 3 is a flow chart showing steps to view or edit a diary.

FIG. 4(a) shows an exemplary Web page being viewed with a browser, and also shows a diary navigator bar.

FIG. 4(b) shows an exemplary Sections window that allows the user to choose a named diary section to view.

FIG. 4(c) shows an exemplary Calendar Window that allows a user to select a dated diary section or to view.

FIG. 4(d) shows an exemplary Privacy window that allows an owner to set the privacy attributes of a diary section or content object.

FIG. 4(e) shows an exemplary Notes window that allows the diary owner to add notes to a link on a diary page.

FIG. 4(f) shows an exemplary Advanced window that allows a diary owner to perform various advanced editing functions on a diary page.

FIG. 4(g) shows an exemplary Add Entry window that allows a diary owner to add various types of content to a diary page.

4

FIG. 4(h) shows an exemplary window allowing a diary owner to add content of type image to a diary page.

FIG. 4(i) shows an exemplary window that allows the diary owner to manipulate existing content on a diary page.

FIG. 4(j) shows an exemplary diary page as displayed in edit mode.

FIG. 4(k) shows an exemplary copy/move window that allows a diary owner to copy or move content objects from and/or within their diary page.

FIG. 4(l) is a flow chart showing how an edit is performed on content during edit mode.

FIG. 4(m) shows an exemplary diary page after a content object has been moved, but while the page is still in edit mode.

FIG. 4(n) shows an exemplary diary page after a content object has been moved, and after an exit from edit mode.

FIG. 4(o) shows an exemplary diary page after a content object has been copied to another page and, after an exit from edit mode.

FIG. 5(a) shows an overview of a first embodiment of a data transfer function involving three machines.

FIG. 5(b) shows an overview of a second embodiment of a data transfer function involving three machines.

FIG. 6(a) shows a Web page fetched from a content provider system allowing the diary owner to add some content on the page to his diary.

FIG. 6(b) shows an example of a window generated by an executable function during transfer of data between three machines, to prompt a diary owner for his name and diary server.

FIG. 7(a) shows an example of a window displayed during transfer of data between three machines.

FIG. 7(b) shows an example of a window displayed during transfer of data between three machines.

FIG. 8 shows an exemplary architecture for an embodiment of the present invention.

FIG. 9 lists exemplary files provided by cover providers in a preferred embodiment of the present invention.

FIG. 10 lists exemplary files provided to generate the contents of diary pages in a preferred embodiment of the present invention.

FIG. 11 shows an exemplary format of an AUA-database of FIG. 10.

FIG. 12 shows exemplary cover HTML-files in a preferred embodiment of the present invention.

FIG. 13 shows a diagram of a relationship between various kinds of covers and the layout of pages generated by a diary applet.

DETAILED DESCRIPTION OF EMBODIMENTS

Reference will now be made in detail to several embodiments of the present invention, examples of which are illustrated in the accompanying drawings. Wherever practicable, the same reference numbers will be used throughout the drawings to refer to the same or like parts.

A. General Discussion

The present invention allows a diary owner to organize his information like a book. This information includes links to Websites and to content he has chosen to add to the diary. A diary includes one or more "sections." Each section contains one or more pages. The owner of the diary inserts "content objects" into sections of his diary. Some sections ("named

US 6,415,316 B1

5

section”) have theme, such as “Recipes,” “Telephone Number,” or “Favorite Sites.” All other sections (“dated sections”) correspond to a date. Optionally, content objects may be organized by time. The described embodiment of the present invention handles time attached to content objects in a well-known and intuitive way. For example, it may sort these content objects by time and present them in the diary organization before content objects without time attached.

A diary has a book design. The book design determines the graphics and layout of content within pages of a diary. A book design includes page designs, and how page designs are mapped to actual pages of the diary. A page design may be unique to a section or repeated within a section or across sections. For example, the same page design may be applied to all Monday pages. The page design defines the visual and audible appearance of the page. A page design provides slots for content entries or objects. The page design determines the size and location of these slots within the page.

Diary owners insert content objects into pages. When a content object is inserted into a page, it is displayed in one of the slots provided by the page design of the page. A content object can be any type of object, including text, bookmarks, images, programs, movies, etc. The set of content objects inserted into the diary by the user is known as the “book content.”

Unlike a traditional book, the book design and book content of a diary are independent. Both of the book design and the book content may be changed at any point in time. The owner of a diary can switch book design at any time. The designer of a book design may change the book’s design at any time.

The diary software dynamically combines the diary’s book design and book content to present a cohesive view of the ‘book.’ Furthermore, a single book content may have many different views, each with a different book design.

The described embodiments of the present invention are empowered by features that only an electronic book can offer. The electronic book can be stretched whenever required. The owner of the diary may add new sections to the book. The diary determines the number of pages in a section by the amount of content placed by the diary owner into the section. Whenever the number of pages of a section is insufficient to contain the amount of content in the section, the diary adds a new page to the section automatically. Similarly, the diary automatically deletes unused pages in a section.

Like other electronic books, the diary can be accessed through an electronic network. The diary can be read in concurrently by multiple users in different locations. Furthermore, different constituents of the diary may be stored or located in different locations within the network. For example, the book design, book content, parts of the book design, or content entries may be located in different locations within the network.

In the described embodiment, the diary may enforce privacy-rules on any part or level of the book, i.e., book, section, page, individual content entry. Other embodiments may implement other levels of privacy rules, and multiple implementations of this privacy concept are possible. In various implementations, privacy enforcement may be either advisory or mandatory. Different authentication and verification schemes may be employed to identify the user attempting to access the book. If a user does not have sufficient permission to view an object in a diary, the diary may not make the object visible to the user, i.e., the user does not even know that the object exists, or it may present the object using an alternate representation.

6

The diary has electronic search and navigational capability. The user of a diary may jump directly to any section/page of the book directly by electronic navigation through the book. The diary has dedicated search options to speed up access to content. For example, the user may have the option to jump to the most recent or nearest future section/page that contains at least one content entry.

The diary provides means to manipulate the contents in the book. A diary owner can provide permission to authorized users to insert content entries manually or by any other means, copy, delete, or move content entries. Content entries may be manipulated one at a time, or in larger groupings. For example, all the content entries within a section may be manipulated as a group, the content entries within a range of sections may be manipulated as a group, or all the content entries in the book may be manipulated as a whole.

FIG. 1(a) shows a physical connection between four data processing systems: a user system 102, a diary server 104, a cover provider 105, and a content provider 106. It will be understood that, although only one of each kind of system is shown for clarity, there may be many user systems 102, many diary server systems 104, many cover provider systems 105, and many content provider systems 106. A user normally has one diary on one diary server, but a user can also have multiple diaries one or on multiple diary servers. Each of the data processing systems communicates with the others via a network 140. Network 140 can be the Internet, a WAN, a LAN, a wireless network, a cellular telephone network, a radio frequency network, or any other appropriate network or connection.

FIG. 1(b) is a block diagram of a computer network in accordance with an embodiment of the present invention, showing how a diary is edited or viewed. FIG. 1(b) includes user system 102, diary server 104, and one or more content providers 106. User system 102 can be the system of the owner of the diary or a system of some other person who wishes to view the diary. User system 102 includes a browser 110 (which is shown executing a diary applet downloaded from diary server 104) and diary information 114 containing information about the diary of this diary owner. One of the functions of diary applet 112 is to generate the HTML 111 for the Web pages of the user’s diary (which preferably are displayed by browser 110 in the browser window) on output device 222 (see FIG. 2b).

Diary server 104 includes diary information 122 (which includes diary information for a plurality of users’ diaries), diary software 124, and an original copy of diary applet 112, residing with the HTML or other description language 113 needed to display an initial Web page. Throughout this document, although the embodiment is described in connection with HTML (Hypertext Markup Language), it will be understood that the invention can be implemented using any appropriate descriptor language. Similarly, while the described embodiment uses a Java applet 112, any appropriate executable program can be used to implement the functionality of diary applet 112, including but not limited to JavaScript, ActiveX controls, Visual Basic, and plug-ins. In the described embodiment, a user begins viewing or editing a diary by viewing a Web page 113 available from the diary server. This Web page allows the user to indicate that he wishes to view or edit a specified diary. This indication begins execution of diary applet 112, which sends a request 116 to diary server 104 for the contents of the specified diary. When diary software 124 receives request 116 from browser 110, it sends information 118 appropriate for the specified diary to the user system. This information 118 includes diary information, an example of which is discussed below in connection with FIGS. 9 and 10.

US 6,415,316 B1

7

Diary applet **112** reads diary information **114** received from the server and generates HTML **111** for one or more diary pages in accordance with diary information **114**. Diary applet **112** instructs the browser **110** to display the diary page(s) in the browser window. In the described embodiment, diary applet **112** communicates with the user both through the browser window and via a user interface popped up by the applet (see, e.g., FIG. 4(a)). All direct interaction (i.e., all interaction that is not done via the browser window) of the diary applet with the user is by windows that are popped up by diary applet **112**.

It will be understood that all or part of a person's diary can be viewed either by the owner of the diary or by other people, depending on how the owner sets privacy values associated with the diary. In fact, a person's diary pages can, in general be viewed by any person having access to a browser. The browser can be a standard Web browser, such as Navigator, available from Netscape Corp. and Explorer, available from Microsoft Corp. and does not need to be modified to allow a user to view an existing diary.

FIG. 1(c) is a block diagram of a computer network in accordance with an embodiment of the present invention, showing how a content provider creates a diary cover using a cover provider system **105**. The cover provider can be, for example, an entity who has paid a fee to be allowed to create diary covers that diary owners can use in their diaries. It is anticipated that cover providers will add advertisements, product placements, or the like to their covers, but this is not required. A cover provider executes an enhanced version of diary applet **112**.

FIG. 2(a) is a block diagram of a data processing system acting as a user system **102**. FIG. 2(b) is a block diagram of a data processing system acting as a diary server **104**. Data processing systems **102**, **104** include processors **202**, **252** and storage areas (such as memories) **204**, **254**. Storage area **204** in user system **102** includes a browser **210** and diary information **114**. Browser **210** can be any appropriate browser, including but not limited to Navigator and Explorer. Storage **254** in diary server **104** includes diary information **122** for all users and diary software **124** for communicating with applet **112**.

Systems **102**, **104** also include an input device **220**, **270** such as a mouse, a keyboard, a touch screen, or any other appropriate device. Systems **102**, **104** also include an output or display device such as a display screen, monitor, or any other appropriate device. Certain implementations of the invention include sound capability. Both system **102**, **104** connect to a network such as the Internet or any other appropriate network via a connection **230**, **280**.

In certain embodiments, diary server **104** includes a computer readable medium input device **274**, which is capable of reading a computer readable medium **276**. A person of ordinary skill in the art will understand that the systems of FIGS. 2(a) and 2(b) may also contain additional elements, such as input/output lines; additional input devices and additional display devices. The systems of FIGS. 2(a) and 2(b) also may include application programs, operating systems, data, etc., which are not shown in the figure for the sake of clarity. It also will be understood that the systems of FIGS. 2(a) and 2(b) can also include numerous elements not shown, such as disk drives, keyboards, display devices, network connections, additional memory, additional CPUs, additional processors, LANs, input/output lines, etc.

In the following discussion, it will be understood that the steps of methods and flow charts discussed below preferably are performed by one of processors **202**, **252** (or other

8

appropriate processor or processors) executing instructions stored in storage areas **204**, **254** (or other appropriate storage areas). Specifically, the steps of the embodiment described herein are performed by diary applet **112** when it executes in browser **100** (and by other executable programs within the browser as described below) and by diary software **124**. It will also be understood that the invention is not limited to any particular implementation or programming technique and that the invention may be implemented using any appropriate techniques for implementing the functionality described herein. The invention is not limited to any particular programming language, operating system, or network protocol.

Some or all of the instructions and data structures in storage areas **254** may be read into memory from computer-readable media **276**. Execution of sequences of instructions contained in the storage areas causes processors **202** or **252** to perform the process steps described herein.

In alternative embodiments, hard-wired circuitry may be used in place of or in combination with software instructions to implement the invention. Thus, preferred embodiments of the invention are not limited to any specific combination of hardware circuitry and software. The instructions performed by the processors can also be transmitted over a carrier wave in a computer network such as the Internet an intranet, a LAN, a WAN, and so on.

B. Overview of Viewing and/or Editing a Diary

FIG. 3 is a flow chart **300** showing steps to view or edit a diary. In general, steps of the left side of the figures are performed by diary applet **112** executing in a browser of user system **102**, while steps on the right side of the figure are performed by diary software **124** executing in diary server system **104**. In step **302**, the user starts his browser **110** and views an initial diary Web page (not shown) received by the browser in a manner known to persons of ordinary skill in the art. This diary Web page allows new diary owners to register and to pick initial covers for their diaries (not shown), while allowing existing diary owners to decide to view and/or edit their diaries and allowing any person to view the non-private diaries of others. In step **304**, the user indicates that he wishes to view or edit a diary, diary applet **112** is obtained from system **104** and executed within browser **110** and the remainder of steps of FIG. 3 are performed.

In step **304**, diary applet **112** sends the request for diary information to diary server system **104**, where, in step **306**, diary server system **104** sends diary data **122** for the specified diary to applet **112**. In a preferred embodiment of the invention, this diary data is transferred as a ASCII document, and not via the browser, although any appropriate format could be used. As will be understood by persons of ordinary skill in the art, the applet and diary data could also already be stored in a cache of the system **102** and, therefore, it would not be necessary to transfer data from the server. This cache is not necessarily the browser cache. Diary applet **112** receives diary data for the user and stores it in diary information **114**. In the described embodiment, diary information stores three basic types of data: an AUA-database specifying the content of the diary page(s) that was gathered or created by the user; a cover (also called a "presentation context") for the diary, and configuration information for the user. An AUA is an "Annotated Universal Address," as described in U.S. patent application Ser. No. 09/144,717, entitled "System and Method for Generating, Transferring and Using an Annotated Universal Address" by van der

US 6,415,316 B1

9

Meer. The AUA-database is user-specific. The cover is shared by all users that have selected the same cover. The configuration information, such as privacy level, passwords, or the full name of the user, is user-specific. A fourth part (a backup AUA-database, not shown) can be created on the fly and is used to “go back” to previous diary content.

In step 308, diary applet 112 generates one or more pages of the diary in HTML in accordance with the cover, content, and configuration information. The HTML is displayed as a diary page by browser 110. After generating a first page of the diary, diary applet 112 displays a navigator bar or some other appropriate user interface, such as that shown in FIG. 4(a), and thereafter reacts to the actions of the user to view or change the diary, as described below. In step 310 diary applet 112 sends changes (if any) for the user’s diary to the diary server (periodically or at user’s instruction).

C. Navigation by a user Within a Diary

The following section provides examples of the various functions of the diary navigation mechanism used in the described embodiment. It will be understood that the specific buttons and functionality described are provided by way of example and not of limitation. Other buttons and other functionality can be added to and certain buttons and functionality can be omitted from the invention without departing from the spirit of the present invention.

1. The Navigation Bar

In FIG. 4(a), exemplary diary page 400 is being viewed with browser 110, and diary applet 112 has popped up a diary navigator bar window 402. In the Figure, both diary page 400 and navigator bar 402 are displayed on a display screen 404. As discussed above, diary page 400 was generated by diary applet 112 in accordance with diary information 114 for the diary page 400, which was previously created by an owner of the diary. As can be seen, diary page 400 is a named page entitled “Car Section” and is dedicated to information added by the diary owner about cars. In the figure, the diary owner has previously added one image of a car 410 to the diary page. Dated pages look similar to named pages, except that the date appears on the page (e.g., at the top) and is associated with the page in the diary information 114.

As shown in FIG. 4(a), navigator bar 402 includes buttons 422, 424, 426, 428, 430, 432, 434, 436, 438, 440, 442, 444, and 446. The first eight buttons are used to allow the user to move around within the pages and sections of a diary. Thus, button 422 represents a “Sections” function that allows the user to view named sections of the diary. Buttons 424, 432 allow the user to display a first of last section that contains at least one content object. “First” and “Last” are to be interpreted relative to the section currently showing. Buttons 426 and 430 allow the user to display the immediately previous or next section. “Previous” and “next” are to be interpreted relative to the section currently showing. For dated sections, the previous section is the section that corresponds to the date before the date currently showing. Next corresponds to the date after the date currently showing. Button 428 allows the user to display a diary page or section for a specific date. Each section, dated or not, can have multiple pages within the section. Buttons 434 and 436 allow the user to display next or previous diary pages for a section. Button 438 allows a user to change the privacy level on which the diary is operating, provided that the user is able to authenticate himself at the desired level. Buttons 440, 442, 444, and 446 are only available when the diary is operated at the “owner” privacy level. Button 440 will pop-up a new window containing the advanced diary opera-

10

tions such as, e.g., moving or copying objects from one section to another. Button 442 allows a user to create a “text” object to be placed in the current section. The final two buttons 444, 446 provide access to a backup function and an edit property function. Button 446 is only present if the user who is running the diary applet is also registered as a cover builder. Button 446 allows the user to change the properties of the diary itself.

FIG. 4(b) shows a Sections window that allows the user to move between named sections in the diary. The user is presented with a list of existing named sections. Diary applet 112 reads the user’s selection and generates HTML for the selected section in accordance with diary information 114. In the window of FIG. 4(b) and others of the windows mentioned below, the user can click cancel 405 or accept 406 to cancel or accept any changes he has made.

FIG. 4(c) shows a calendar window that allows the user to move between dated sections in the diary. The user is presented with a calendar input that allows him to view a diary page for a given month, day, and year. Icon 407 is a shortcut. It indicates that the diary page for “today” should be displayed. Buttons 408 allow the user to increment or decrement a current year. Area 409 allows the user to enter a year, which may be more efficient than incrementing or decrementing under certain circumstances. Diary applet 112 reads the user’s selection and generates HTML for the selected page or section in accordance with diary information 114.

2. Privacy Level of a Diary Page

Button 438 allows any user to change the privacy level on which the diary is operating, provided that the user is able to authenticate himself at the desired level. Authentication is preferably performed by requiring the user to enter a password required to change the privacy level to a certain level. In the described embodiment, clicking or otherwise selecting this button displays window 450 of FIG. 4(d).

FIG. 4(d) shows a window 450 or similar navigational element for the privacy function of button 438. Window 450 allows a user of the diary to set a privacy level at which the diary is operating of: world, friend, close friend, best friend, and owner via respective buttons 451, 452, 453, 454, and 455. Any user can change the privacy level, provided that he is able to authenticate himself, e.g., via a password supplied in area 456. This window determines which sections and which objects will be visible during browsing through the diary. If the user selects the owner privacy level (button 455) and can supply a correct password in area 457, after clicking OK button 456, buttons 440, 442, 444, and 446 of FIG. 4(a) become available to the owner. Otherwise these buttons are grayed out. Use of button 440 will pop-up a new window containing the advanced diary operations such as, e.g., moving or copying objects from one section to another. The passwords for a particular user’s diary pages are stored as configuration information in that user’s diary information 114.

3. Adding a Note on a Diary Page

Button 442 provides a way for the owner to make quick notes with an optional associated link in the diary. FIG. 4(e) shows a window 460 or similar navigational element for the note function of button 442. Window 460 includes an area 461 in which a diary owner can enter an address (such as a URL) of a link in the diary. The window also includes an area 462 where the diary owner can enter his text. After the diary owner enters a link address and some text, applet 112 adds the entered text to the diary information in association with the entered link on the page. When the diary page is viewed, the note (with the link attached to the note) will be displayed as part of the diary page.

4. Store Function

Store button 444 stores the AUA-database, the configuration, and the backup AUA-database if and only if these three parts of the diary information have been created (only in case of the backup AUA-database) or changed. Button 444 is enabled by diary applet 112 when something in the diary has been changed. In the described embodiment, the diary also saves the diary information when the user instructs the browser to load a Website different from the diary server. This will cause the browser to unload the diary, which automatically starts the save option.

5. Advanced Functions

Button 446 provides access to certain advanced functionality as described below. FIG. 4(f) shows a window 470 or similar navigational element for the advanced function of button 440. Window 470 includes four upper left-hand buttons 471, 472, 474, 475, which allow the diary owner to modify his AUA-database. With these buttons an owner can add a content entry (button 471), add a section (button 472), change passwords for privacy levels (button 473), put diary in edit mode (button 474), edit section properties (button 475), and make/load backup (button 476). Button 477 is a special button available only to content providers.

Button 473 allows the owner to change passwords for the five privacy levels that are shown in FIG. 4(d). All users must enter an appropriate password before diary applet 112 will generate HTML (for content objects) or otherwise reveal the existence of objects having those privacy levels (e.g., for named sections in the named section list 404). Button 476 allows the user to backup/load the diary contents. Button 477 is only present if the user who is running the diary applet is also registered as a content provider. Button 477 allows a content provider to change an existing "standalone" HTML file in such a way that it will, after the change, provide content for any user to include in his diary. If the diary owner adds a section to his diary via button 472 (or changes a section via button 475), the diary owner only needs to specify the name of the section (window not shown). Diary applet 112 will add a section to the user's diary having the specified section name using the default cover for the diary.

i. Adding Content Entries

FIG. 4(g) shows a window or similar navigational element for the add content button 471 of FIG. 4(f). This window allows an owner to add his own content entries to his diary. The diary owner selects a type of: image 412, text 413, applet 414, or embedded object 415. Depending on which type of content the diary owner is adding, an appropriate window, such as the window in FIG. 4(h) is displayed.

FIG. 4(h) shows a window 480 or similar navigational element to allow the diary owner to add his own image entries to his diary. This requires specifying the address (such as a URL) of the image (in area 487), as well as the real width and height of the image in areas 488 and 489. The buttons on the top row are used to specify whether or not to provide the image to other diary owners, i.e., whether other diary owners can copy the content from a diary into their own diary (button 481), to set a weight (button 482), to set a time button 484, to set a privacy level for the image (button 485), and to provide a textual description of the image in the diary (button 486). Image weights are used, for example, when a series of images are available. Each image in the series is assigned a weight so that applet 112 can order the images if needed. Time button 484 associates a time (such as a creation date or a date in history) with the image. Here, the date associated with the object is implicit, since the object is part of a dated section, but in a named section an

object can have an associated time. Under certain circumstances, applet 112 will generate a diary page having the images of the page in time-sorted order. Diary applet 112 will add an image to the current section (that is, the entry just created). Although not shown in the figures, similar windows exist to allow the diary owner to add content of types text, applet, and embedded object to a diary page. An embedded object is the HTML term for an "external" object type, such as a Quick-Time movie, RealAudio, RealVideo, etc.

ii. Modifying Content Entries

Button 474 of FIG. 4(f) causes applet 112 to display an edit mode window 490 as shown in FIG. 4(i), which enables a diary owner to modify content entries that are already in the diary. As shown in FIG. 4(j), in this mode, entries in a diary page are generated by diary applet 112 to have a clickable border 499 or some similar indicator (which can be cover specific). Clicking this border 499 brings up the window 490 shown in FIG. 4(i). Window 490 offers an owner the ability to modify the position of the entry in the section: move to top position; move one position up; move one position down; move to bottom position (buttons 491, 492, 493, and 494), and the ability to copy, move, or delete the selected entry (button 495). The diary owner can change properties of a content object on a diary page via button 496, which opens a window (not shown) similar to that which is used to add an entry (see FIG. 4(h)), with at least one difference.

Content entries that are provided by third parties are not modifiable. Because a content provider has invested time, money, and/or energy in the creation of a diary object, and because content providers should be encouraged to continue to supply content, users are not allowed to change any aspect of an object that was provided by a third party. This will prevent undesirable user actions such as changing the link associated with an image of CompanyA (that originally pointed to some spot in the Website of CompanyA) to point to some spot in the Website of companyA's biggest competitor. Only the time, privacy level, and description can be changed by the diary owner. Note that the time, privacy level, and description were the entries added by the diary owner himself (as opposed to transferred from a content provider Web page).

FIG. 4(l) is a flow chart showing steps involved in editing an existing content object. In step 250, once diary applet 112 determines that the page is in edit mode, applet 112 regenerates the page to add an object control "handle" 499 to each content object on the diary page (see FIG. 4(j)). In step 251, when the diary owner clicks on a control handle, the browser initiates executable program code (e.g., Java or JavaScript) that has been generated by applet 112 and added to the HTML edit-mode page being displayed. When the diary owner clicks on the handle 499, the browser executes this program code in a manner known to persons of ordinary skill in the art. The program code then communicates with applet 112 to tell it which content object has been selected for manipulation. Applet 112 then displays appropriate windows (see, for example, FIG. 4(f) and 4(k)) to allow the diary owner to manipulate the selected content object). Diary applet 112 executes appropriate action(s) on the selected content object identified by the handle 499. In step 253, diary applet 112 regenerates the HTML for the diary page to reflect the edit, after which the HTML is displayed by browser 110.

The reason that diary applet 112 must generate an executable program associated with each handle is that there is no other way for applet 112 to learn when the diary owner has

US 6,415,316 B1

13

clicked on a handle 499. The HTML for a diary page is actually displayed by browser 110, and the browser would not otherwise notify applet 112 of a handle click. The method of FIG. 4(l) enables embodiments such as a diary to display and manipulate contents within an HTML document and, at the same time, uses the browser as a vehicle to handle the actual display and diary owner input. Using the browser avoids having to duplicate the browser functions that interface to the user and that display pages in accordance with HTML.

Thus, for example, in FIG. 4(j), diary applet 112 has already regenerated the diary page to display a handle 499 around the object and to add an executable program in the HTML for the diary page. This executable program is associated with the handle and will be executed when the handle is clicked. In the described embodiment, when the handle 499 is clicked, the associated executable program will pass the identity of the selected content object to applet 112, which will then display the window of FIG. 4(i). This window (and the other windows described herein) are generated by applet 112 and are not displayed via the browser. If the diary owner indicates via several presses of button 494 of FIG. 4(i) that the content object is to move to the bottom position, applet 112 will eventually regenerate the diary page to look like the diary page in FIG. 4(m). Note that the selected content object has been moved to the bottom right on this diary page (which the cover for this diary has defined as the bottom position of this diary page). Applet 112 communicates with the browser to display the regenerated HTML of the diary page. Once the diary owner clicks on accept button 406 of FIG. 4(i), applet 112 is caused to exit edit mode (via another executable program) and regenerates the diary page without handle 499 to yield a page such as the page of FIG. 4(n), where content object 401 is again displayed in its new position, but without a handle. The next time this page is saved to diary server 104, this positional change is saved in the user's diary information 122.

If the owner has entered edit mode and then presses button 495 of FIG. 4(i), applet 112 generates HTML for the window of FIG. 4(k), which allows the diary owner to perform various copy and move operations on a content object in a diary page. As another example, if the diary owner clicks handle 499 of FIG. 4(j), executable code in the regenerated page associated with the selected handle 499 executes to alert applet 112. If the user now clicks button 495, applet 112 displays the window of FIG. 4(k), which includes a copy button 350, a move button 360, and a delete button 361.

The destination section for a content object while copying or moving might already contain an identical content object. If the owner desires to have another content object in the destination section (i.e., one more than before the operation), he checks the "allow duplicates" box in FIG. 4(k). If he does not check this box, and if an identical content object already exists at the destination, the content object will not be put in the destination section.

If the diary owner indicates that he wants to copy the content object (by pressing button 350 of FIG. 4(k)), diary applet 112 will allow the diary owner to specify a dated or a named page in a manner similar to that of FIGS. 4(b) or 4(c). Diary applet 112 then regenerates HTML for the page to which the object is to be copied. When the diary owner exits edit mode, a page such as that of FIG. 4(o) will be displayed. Note, that in the example, the selected content object has been copied to a page having a different date than its original page. The next time this page is saved to diary server 104, this change is saved in the user's diary information 122. Note that in both examples above, an end-user

14

has been able to modify a page displayable in a browser (e.g., a diary page) without writing any HTML code.

D. Transferring Data From a User's Diary to the Diary Server

It should be understood that, although the following example is described in terms of a transfer function for a diary, the transfer function described can be used in any circumstances where a first machine (such as system 106) sends data (e.g., third party content) to a second machine (such as system 102), and the data then needs to be sent to a third machine (such as system 104) under control of an applet executing in a browser on the second system. The present invention is contemplated to be of use in non-diary applications, as well as in diary applications.

FIG. 5(a) shows an overview of a first embodiment of a data transfer function involving three machines. FIG. 5(b) shows an overview of a second embodiment of a data transfer function, involving three machines. FIG. 5(a) will be discussed first. In step 1 of FIG. 5(a), the browser 110 loads the content provider's HTML page from system 106 into browser 110 in system 102. This HTML page includes a function "F" 502 that can be activated by the user via the HTML page (for example, by clicking on an "add" button on the page). The user looks at the content provider's page (as displayed by the browser) and determines whether there is any third party content on the page available for his diary that he wants to add to his diary. If so, the user so indicates. For example, in the described embodiment, the user clicks on an "add" button 602 on the TML page (see FIG. 6(a)) associated with the desired third-party content. Licking on this content activates function "F" 502 within the displayed Web page, as shown in step 2 of FIG. 5(a). In the described embodiment, function "F" is a JavaScript, but it can be any appropriate form of executable program.

As shown in step 2 of FIG. 5(a), the function "F" pops up a window 504 that asks the user for his name and for the location of the diary provider 104 (step 3). Function "F" needs the name/exact location of diary provider 104 so that it can generate HTML page 506 (step 4) that requests the transfer applet 508 from the correct diary server 104. (Note that certain embodiments can have more than one diary server 104). An example of window 504 displayed by function "F" is shown in FIG. 6(b).

In step 4, the function "F" also generates HTML 506 that contains:

- 1) activation of a transfer applet (to be loaded from the diary server 104) (step 5 and 6), and
- 2) the parameters of the transfer applet containing all information about the provided content.

Thus, function "F" knows how to generate the HTML to activate transfer applet 508 (at the host stored by the user) with the parameters of the information to store.

In step 5, function "F" instructs browser 110 to load the HTML page 506 in a new HTML-browser window. By loading that page 506, the browser will load and execute the transfer applet 508 on system 102 (step 6). When transfer applet 508 executes, it transfers data to system 104. The function "F" uses a priori knowledge about the name/exact location of the transfer applet on diary server 104. Similarly, function "F" uses a priori knowledge about the names and semantics of the parameters required by the transfer applet.

It is important to note that, due to security restrictions common to many implementations of execution environments of programs such as Java applets, transferring data between three machines (102, 104, 106) is problematic.

US 6,415,316 B1

15

Because the data eventually has to be stored on system **104**, because communication may entries to sections set up with the diary applet already running on the system **102**, and because the diary applet was loaded from system **104**, the transfer applet **508** also must be loaded from system **104**. The problem is how to get the information describing the content provided to the transfer applet **508** if the transfer applet is to be loaded from server **104**. For instance, the transfer applet is not allowed to connect to the content provider system **106**. The problem is solved by generating the HTML page **506**, which contains the instructions that activate the transfer applet **508** in combination with all information about the content provided that should be handled by the transfer applet. In other words, the HTML page **506** is self-contained and the transfer applet activated by it can handle the transfer without any other communication other than with its source system **104**, which is allowed since it was loaded from system **104**. Thus, the method shown in FIG. **5(a)** solves the problem caused by the security restraints of the execution environment.

In at least one embodiment, the database is not really transferred immediately, but is only scheduled for storage. A running diary applet performs the actual storage. If there is no running diary applet in browser **110**, the transfer applet will start one. Similarly, in at least one embodiment, all applets store to a "store queue." This way, the transfer applet **508** can insert a database in the queue that will be processed by another diary applet **112**. Sharing of the new content (as transferred by the transfer applet) with the diary applet is extremely important because the new content will have to be made visible by the diary applet immediately and efficiently, e.g., it would not be acceptable if it would require a user action in order to view the new content. Similarly, it would not be acceptable if it would require a full "re-upload" of the diary information **114** by the diary applet in order to view the new content. The underlying fundamental mechanism on which the sharing has been based is the sharing of class variables in a single Java virtual machine.

Table 1 shows an example of a JavaScript that performs the function of function "F" of FIG. **5(b)**. Table 1, which is an HTML/Javascript, forms a part of the specification and is incorporated herein only for purposes of example.

FIG. **5(b)** shows an alternate embodiment of a transfer function in which the function "F" does not have a priori knowledge about the name/exact location of the transfer applet **508**. It can be advantageous to have function "F" not know the name/exact location of the transfer applet. Because there are many function "F"s in the network—each content provider **106** has HTML containing a version of function "F"—it can be problematic if the diary server **104** decides to change the name of the transfer applet **508**. If each function "F" (which resides on the content provider(s) **106**) knows the name of the transfer applet **508**, each function "F" would have to be changed if the name/location of the transfer applet **508** is changed. If the function "F" does not know this information, function "F" does not have to change if the name of the transfer applet **508** stored on system **104** changes.

In FIG. **5(b)**, function "F" (received from system **106**) pops up window **504** as described above and creates a "network package" **507** that contains at least:

- the name of the server **104**;
- the name of the user; and
- the properties of the content to be transferred.

Network package **507** is POSTed to diary server **104**. Diary server **104** generates the page **506** using the information in the network package **507** and returns it to function "F" in

16

system **102**. Function "F" continues as in FIG. **5(a)**. Specifically, function "F" instructs browser **110** to load the HTML page **506** in a new HTML-browser window. From this point onwards, the embodiment of FIG. **5(b)** behaves as the embodiment of FIG. **5(a)**.

It will be appreciated that in this embodiment, the a priori knowledge of function "F" is limited to only the way the network package **507** is to be structured, the content that is to be put into network package **507**, and the way this package **507** is to be sent to diary server **104**. The amount of knowledge required is less than the knowledge required to generate page **506** itself.

It will be appreciated that the embodiment of FIG. **5(b)** limits the "outer world" restrictions on the interface of diary server **104**. Once the diary server **104** is in operation (as illustrated in FIG. **5(b)**), it should always support the handling of network packages **507**. However, the internals of page **506** may be changed by the diary server **104** whenever such a change is required. Note that such a change is not an option in the embodiment of FIG. **5(a)**, since the a priori knowledge about the contents of page **506** have been spread over numerous content provider systems **106**.

FIGS. **7(a)** and **7(b)** show examples of windows displayed by transfer applet **508** during transfer of data between three machines. As described above, once page **506** is loaded, the transfer applet **508** will be activated automatically and it will pop-up the window shown in FIG. **7(b)**. This window shows a list **701** that represents the objects being transferred. In the Figure, there is only one object to be transferred. Each entry is represented by a textual line that consists of the suggested destination (or the destination suggested by the user, see below) for the entry (in this case, the section May 28, 1998), followed by a textual description of the entry (which in this case is "nice car").

Each of the entries in the current transfer may be deleted from the list **701** by selecting the entry in the list **701** and then clicking delete button **703**. The destination section of each entry in the current transfer may be changed by selecting the entry in the list and then clicking the button **702**. The transfer applet **508** will pop-up a window similar to that of FIG. **7(a)**. FIG. **7(a)** is simplified in that the user will be able to select any date for the destination section or any of the named sections that exist in the diary. The role of the check **704** is exactly like the role of check **406** described above.

After the user has deleted the entries that he is not interested in, and after he has changed the destinations of entries to sections that he considered appropriate, he presses either the OK button **406** (FIG. **4(b)**) or the cancel button **405**. If the cancel button is pressed, the whole transfer is cancelled. If the OK button is pressed, the transfer applet **508** will add the entries to the AUA-database in the user diary data **122** on the user system **102**. In one embodiment, transfer applet **508** issues a "store" command that is queued in the store queue and checks whether a diary applet is already running. If no diary applet is running, the transfer applet will start a diary applet automatically.

E. System Architecture

FIG. **8** shows an exemplary architecture for an embodiment of the present invention. As shown by the key, the architectural diagram includes a top layer representing two types of users: cover providers **802** and users **804** (diary owners and other users). A section **806** represents the functionality of diary applet **112**. A section **820** represents browser **110**. A section **822** represents the Internet (or other appropriate network or way of communicating between

US 6,415,316 B1

17

entities). A section **830** represents diary software, such as diary software **124** of diary server **104**.

In the described embodiment, cover providers and end-users both run diary applet **112**. However, cover providers have access to special functionality for constructing covers that end users do not have. It should be noted that diary applet **112** runs "inside" browser **110**. It communicates with the user through the browser window and through its own user interface **807**. The diary navigator **807** provides standard navigation functionality to the user (via navigation bar **402**). It also acts as an intermediary between the browser and the rest of the diary applet **112**. One of its important tasks is to transfer the pages of the diary to browser **110**. Diary pages are generated by a generator in the diary applet. This generation is performed by combining data from covers (also called "presentation contexts") designed by a cover provider and the content that the user has gathered for his diary.

Because of privacy concerns, content is "filtered" by the session layer, which allows the user to see only the content that he is permitted to see. The user's content is stored in the AUA-database. User settings are stored as configuration data, which includes the passwords required for users to access the different privacy levels. The user also has the ability to create backups of the AUA-database.

The network layer takes care of transferring all diary files over the Internet (or other network) between the user and the content provider. In the described embodiment, all network traffic is routed through the browser **110**. This is necessary to be compatible with proxy and firewall setups in corporate networks. All files preferably are stored in a diary server, such as diary server **104**. They can be accessed from anywhere on the network.

F. Data Structures

FIG. **9** lists exemplary files provided by cover providers in a preferred embodiment of the present invention. FIG. **10** lists exemplary files provided to generate the contents of diary pages in a preferred embodiment of the present invention. As shown in FIGS. **8** and **9**, these files include cover-specific files, such as: diary specific HTML files, images, HTML-covers, and a generator configuration file. As shown in FIGS. **8** and **10**, these files further include user-specific files, such as: diary information, a user config file **838**, and backup information **840**.

FIG. **11** shows an exemplary format of an AUA-database of FIG. **10**. As discussed above, the described embodiment supports the following types of content: plain text, images, applets, and embedded objects. The AUA-database is broken into two types of sections: dated sections (see, for example,

FIG. **4(o)**) and named sections (see, for example, FIG. **4(a)**). In the example, the dated sections include a number of dated sections **1106**. The named sections include a number of named sections **1110**. Each dated section **1106** is broken into a plurality of dated content entries **1108**. Each named section **1110** is broken into a number of content entries **1112**. In the described embodiment, the entire structure **114** is stored as a ASCII document. Because bandwidth and storage capacity are scarce resources in the diary applet **112**, certain embodiments compress larger Java objects when they are stored.

FIG. **12** shows exemplary cover HTML-files. Covers are also called "presentation contexts." In one embodiment of the present invention, the presentation context can consist of HTML files in which "on the fly" substitutions by the diary applet are performed. FIG. **12** shows the rules to apply to such HTML-files. As an example, the occurrence of a "wifentry.gif" object in a cover represents a box in which the diary applet may place the representation of a content object.

18

As another example, a list of textual strings such as `__YEAR__` will be substituted by the diary applet by the year (e.g., "1998") of the date section that is to be shown.

FIG. **13** shows a diagram of a relationship between various kinds of covers and the layout of pages generated by a diary applet in an embodiment of the present invention.

In summary, the described embodiment of the present invention allows users to create "diaries" that can be read via a web browser. The owner of a diary can read his own diary and certain non-private parts of the diary can be read by other persons. Thus, the owner of the diary can control what is presented to various classes of persons via his diary. The owner can identify various pages, sections, or content objects as having a certain privacy level. When a diary applet executing in the browser receives information for the user's diary, the diary applet generates HTML only for those portions of the diary that have a privacy level lower than or equal to the privacy level of the viewer who is viewing the diary. Thus, it is possible that the diary applet will generate different HTML pages for an owner and for a random stranger who each ask to view the same diary page on their respective browsers. The person viewing a diary page can only view that content marked as appropriate for him and other people at his privacy level. The diary applet of the described embodiment asks for a password to determine a privacy level of a person. The correct password values are part of the configuration information for a diary.

A user can navigate amongst diary pages like pages in a book. A user can add various types of content to his diary page and can also add content provided by content providers via their Websites. The diary owner can also move content around on a diary page and can copy or move content from one page or section to another page or section. The diary owner can also transfer content from the diaries of others, assuming that the original creator of the content object allows transfer of the object. The original creator might have been the diary owner, another diary owner, or a content provider.

The invention uses a transfer method that avoids certain security restrictions that are problematic when downloading third party content to a diary.

While the invention has been described in conjunction with a specific embodiment, it is evident that many alternatives, modifications and variations will be apparent to those skilled in the art in light of the foregoing description. For example, diary applet **112** could, instead be implemented as a plug-in to browser **110**. This has the advantage of being free of the Java "sandbox," but requires a different plug-in for each type of browser and needs to be installed by the user before it can be used. The functionality of the diary applet **112** could also be implemented in the browser. Moreover, some or all of the of the processing and selection of content could be performed on the diary server **104**, thus saving the amount of data that must be transferred to the browser. Similarly, all of the HTML generation could be performed by the diary server **104**. This might lower the bandwidth required and would simplify the transfer mechanism. However, when envisioned in an application of the invention where millions of users use a diary, this places an unacceptable burden on the diary server(s) **104**. In the described embodiment, the processing capabilities of the user systems **102** are used to avoid this problem. Accordingly, it is intended to embrace all such alternatives, modifications and variations as fall within the spirit and scope of the appended claims and equivalents.

TABLE 1

```
<!DOCTYPE HTML PUBLIC "-//IETF//DTD HTML//EN">
<html>
<head>
<script language="JavaScript">
<!-- don't edit by hand
W3Content_0=' +
'MDlhPXNyYzlodHRwOi8vd3d3LmZlcnJhcmaXQvY29udGVudC9mMzAwLmpwZlxc' +
'bmhlaWdodD0xNjhcXG53aWR0aD0zMjBcXG5cbmU9bGluazlodHRwOi8vd3d3LmZl' +
'cnJhcmaXREXG5ldHlwZT0xXFXuXG4K';
W3Content_1=' +
'MDlhPXNyYzlodHRwOi8vd3d3LmZlcnJhcmaXQvY29udGVudC9mMzAwX2ZyLmpw' +
'ZlxcbmhlaWdodD0yNDdcXG53aWR0aD00MDhcXG5cbmU9bGluazlodHRwOi8vd3d3' +
'LmZlcnJhcmaXREXG5ldHlwZT0xXFXuXG4K';
W3Content_2=' +
'MDlhPXNyYzlodHRwOi8vd3d3LmZlcnJhcmaXQvY29udGVudC9mMzAwX3RvcC5q' +
'cGdcXG50ZWlnaHQ9MTg4XFXud2lkdg9NDAwXFXuXG5lPWxpbnMs9aHR0cDovL3d3' +
'dy5mZXJyYXJpLm10XFXuXZR5cGU9MVxcblxuCG==';
W3Content_3=' +
'MjhlhPXNyYzlodHRwOi8vd3d3LmZlcnJhcmaXQvY29udGVudC9mMzAwLmpwZlxc' +
'bmhlaWdodD0xNjhcXG53aWR0aD0zMjBcXG5cbmU9bGluazlodHRwOi8vd3d3LmZl' +
'cnJhcmaXREXG5ldHlwZT0xXFXuXG4KMT1hPXNyYzlodHRwOi8vd3d3LmZlcnJh' +
'cmkuaXQvY29udGVudC9mMzAwX2ZyLmpwZlxcbmhlaWdodD0yNDdcXG53aWR0aD00' +
'MDBcXG5cbmU9bGluaz1odHRwOi8vd3d3LmZlcnJhcmaXREXG5ldHlwZT0xXFXu' +
'XG4KMD1hPXNyYz1odHRwOi8vd3d3LmZlcnJhcmaXQvY29udGVudC9mMzAwX3Rv' +
'cC5qcGdcXG50ZWlnaHQ9MTg4XFXud2lkdg9NDAwXFXuXG5lPWxpbnMs9aHR0cDov' +
'L3d3dy5mZXJyYXJpLm10XFXuXZR5cGU9MVxcblxuCG==';
function loadTransfer(params) {
  loginWin=open ("", getWindowName ( ),
    'width=350, height=130, scrollbars=no');
  content = params;
  setTimeout ('writeContent (content)', 1000);
}
function writeContent(content) {
  loginWin.document.open ( );
  doc = loginWin.document;
  doc.writeln('<HTML><TITLE>Type the location of your W3Diary:</TITLE>');
  doc.writeln('<HEAD>');
  doc.writeln('');
  doc.writeln('<script language="JavaScript">');
  doc.writeln('');
  doc.writeln('<!-- ')
  doc.writeln('');
  doc.writeln('fu' +
    'nction setCookie(name, value, expires, path, domain, secure) {');
  doc.writeln('    document.cookie = name + "=" + escape (value) + ';');
  doc.writeln('    ((expires) ? " : " +
    'expires=" + expires.toGMTString( ) : "" ) + ');
  doc.writeln('    ((path) ? " : path=" + path : "" ) + ');
  doc.writeln('    ((domain) ? " : domain=" + domain : "" ) + ');
  doc.writeln('    ((secure) ? " : secure=" + "" );');
  doc.writeln('}');
  doc.writeln('');
  doc.writeln('fu' + 'nction getCookie(name) {');
  doc.writeln('    va' + 'r arg = name + "=";');
  doc.writeln('    va' + 'r alen = arg.length;');
  doc.writeln('    va' + 'r clen = document.cookie.length;');
  doc.writeln('    va' + 'r i = 0;');
  doc.writeln('    while (i < clen) {');
  doc.writeln('        va' + 'r j = i + alen;');
  doc.writeln('        if (document.cookie.substring(i, j) == arg) {');
  doc.writeln('            va' +
    'r endstr = document.cookie.indexOf(";", j);');
  doc.writeln('            if (endstr == -1) {');
  doc.writeln('                endstr = document.cookie.length;');
  doc.writeln('            }');
  doc.writeln('            re' +
    'turn unescape(document.cookie.substring(j, endstr));');
  doc.writeln('        }');
  doc.writeln('        i = document.cookie.indexOf(" ", i) + 1;');
  doc.writeln('        if (i == 0) break;');
  doc.writeln('    }');
  doc.writeln('    re' + 'turn ""');
  doc.writeln('}');
  doc.writeln('');
  doc.writeln('fu' + 'nction addContent( ) {');
  doc.writeln('    va' + 'r expire = new Date ( );');
  doc.writeln('    va' +
    'r oneDay = expire.getTime( ) + (24 * 60 * 60 * 1000);');
  doc.writeln('    expire.setTime(oneDay);';
```

US 6,415,316 B1

21

22

TABLE 1-continued

```

doc.writeln('    setCookie("w3duser", ' +
    ' document.nhf.user.value, expire);');
doc.writeln('    setCookie("w3dhost", ' +
    ' document.nhf.host.value, expire);');
doc.writeln('    document.nhf.action="http://" + ' +
    document.nhf.host.value + ' +
    "/transfer/" + document.nhf.user.value;');
doc.writeln('    // document.nhf.submit( );');
doc.writeln('');
doc.writeln('    loginWin=open("", "" +
    getWindowName( ) +
    "", 'width=350,height=130,scrollbars=no');');
doc.writeln('    setTimeout('writeContent( )', 1000);');
doc.writeln('');
doc.writeln('');
doc.writeln('fu' + 'nction writeContent( ) {');
doc.writeln('    loginWin.document.open( );');
doc.writeln('    doc = loginWin.document;');
doc.writeln('    doc.writeln('<HTML>');');
doc.writeln('doc.writeln('<BODY onLoad="document.nw.submit( )">');');
doc.writeln('doc.writeln('<FORM method="POST" name="nw" action="' + ' +
    ' + document.nhf.action+ \">');');
doc.writeln('    doc.writeln('<INPUT type=hidden name="user"
value="' +
    ' + ' + document.nhf.user.value+ \">');');
doc.writeln('    doc.writeln('<INPUT type=hidden name="host"
value="' +
    ' + ' + document.nhf.host.value+ \">');');
doc.writeln('    doc.writeln('<INPUT type=hidden name="content" +
    ' value="' + document.nhf.content.value+ \">');');
doc.writeln('    doc.writeln('</FORM>');');
doc.writeln('    doc.writeln('</BODY>');');
doc.writeln('    doc.writeln('</HTML>');');
doc.writeln('    doc.close( );');
doc.writeln('    window.close( );');
doc.writeln('');
doc.writeln('');
doc.writeln('fu' + 'nction initFields( ) {');
doc.writeln('    document.nhf.user.value=getCookie("w3duser");');
doc.writeln('    document.nhf.host.value=getCookie("w3dhost");');
doc.writeln('');
doc.writeln('    ');
doc.writeln('// -->');
doc.writeln('    ');
doc.writeln('    </sc' + 'ript>');
doc.writeln('    ');
doc.writeln('    </HEAD>');
doc.writeln('');
doc.writeln('    <BODY bgcolor="#FFFFFF" onLoad="initFields( )">');
doc.writeln('');
doc.writeln('    <FORM method="POST" name="nhf">');
doc.writeln('    <TABLE border=0><TR><TD>user:');
doc.writeln('    <TD COLSPAN=2 align=right>');
doc.writeln('    <INPUT size=30 name="user"><BR>');
doc.writeln('    <TR><TD>host: </TD>');
doc.writeln('    <TD COLSPAN=2 align=right>');
doc.writeln('    <INPUT size=30 name="host"><BR>');
doc.writeln('    <TR><TD></TD></TD></TD>');
doc.writeln('    <INPUT type=button value="Add Content" +
    'onClick="addContent( )">');
doc.writeln('    </TD><TD align=right>');
doc.writeln('    <INPUT type=button value="Cancel" +
    'onClick="window.close( )">');
doc.writeln('    </TD></TR></TABLE>');
doc.writeln('    <INPUT type=hidden name="content" value="' + ' +
    ' content+ \">');
doc.writeln('    </FORM>');
doc.writeln('');
doc.writeln('    </BODY>');
doc.writeln('    </HTML>');
doc.close( );
}
function getWindowName( ) {
    wName = "" + Math.random( );
    return 'W3Diary_' + wName.substring(wName.indexOf('.') + 1);
}
// -->
</script>
<meta http-equiv="Content-Type"

```

A000109

TABLE 1-continued

```
content="text/html; charset=iso-8859-1">
<meta name="GENERATOR" content="Microsoft FrontPage 2.0">
<title>CompanyAari Content</title>
</head>
<body bgcolor="#FFFFFF" text="#000000" link="#C70000"
vlink="#C70000" alink="#C70000">
<p align="center"></p>
<div align="center"><center>
<table border="0" cellpadding="0" cellspacing="5">
<tr>
<td align="center" width="50%">The new 1998 CompanyA product<p>
<a href = "JavaScript:loadTransfer(W3content_0)"
onMouseOver="status='Click to add W3Diary Content';return true;">
</a></p>
</td>
<td width="50%"></td>
</tr>
<tr>
<td align="center" width="50%">The new 1998 CompanyA product<p>
<a href = "JavaScript:loadTransfer(W3Content_1)"
onMouseOver="status='Click to add W3Diary Content';return true;"></a></p>
</td>
<td width="50%"></td>
</tr>
<tr>
<td align="center" width="50%">The new 1998 CompanyA product<p>
<a href = "JavaScript:loadTransfer(W3Content_2)"
onMouseOver="status='Click to add W3Diary Content';return true;"></a></p>
</td>
<td width="50%"></td>
</tr>
</table>
<p>
Or get them <a href="JavaScript:loadTransfer(W3Content_3)"
onMouseOver="status='Click to add W3Diary Content';return true;">all three</a>
</center></div>
</body>
</html>
```

What is claimed is:

1. A method of organizing information for display, comprising:

45 sending from a diary server to a user system, a diary program capable of being executed by a browser in the user system;

50 sending diary information from the diary server to the user system, the information comprising content data including an associated time, a page design to specify the presentation of the content data, and configuration information for controlling behavior of a cohesive diary page, the configuration information including privacy level information;

55 assembling the cohesive diary page by dynamically combining the content data and the page design in accordance with the configuration information for the cohesive diary page to be displayed by the diary program running in the browser;

60 receiving by the diary server at least one request for at least one change concerning the diary information, from the diary program in the user system; and

65 sending, by the diary server to the user system, new diary information for changing the cohesive diary page.

2. The method of claim 1 wherein the diary information is for displaying a plurality of diary pages, where each diary

page presents content data and configuration information as an integrated whole.

3. The method of claim 1 wherein the diary page is organized according to at least one of: by date and by topic.

4. The method of claim 1 wherein the new diary information is for changing content of the diary page without changing a general appearance of the diary page.

5. The method of claim 1 wherein the new diary information is for changing an appearance of the diary page without changing content of the diary page.

6. A method of displaying and organizing information, comprising;

55 receiving, by a use system from a diary server, a diary program capable of being run by a browser in the user system:

receiving, by the user system from the diary server, diary information comprising content data including an associated time, a page design to specify the presentation of the content data, and configuration information for controlling behavior of a cohesive diary page, the configuration information including privacy level information;

60 assembling the cohesive diary page by dynamically combining the content data and the page design in accordance with the configuration information; and

US 6,415,316 B1

25

displaying the cohesive diary page, by the diary program running in the browser.

7. The method of claim 6, further comprising:

displaying contents of the diary page by the diary program in accordance with a cover for a diary.

8. The method of claim 7, wherein the cover includes advertisements requested by a user.

9. The method of claim 7, wherein the cover includes advertisements not requested by a user.

10. The method of claim 7, wherein the cover includes product placements determined by a cover provider.

11. The method of claim 7, wherein the cover is created by a cover provider.

12. The method of claim 6, wherein the diary page includes a reference to a content object created by a third party content provider.

13. The method of claim 6, wherein the diary page includes a reference to a content object created by a diary owner.

14. The method of claim 6 further comprising:

displaying a plurality of diary pages, where each diary page presents content data and configuration information as an integrated whole.

15. The method of claim 6 further comprising:

receiving, from the diary server, new diary information; changing content of the diary page without changing a general appearance of the diary page, in accordance with the new diary information.

16. The method of claim 6 further comprising:

receiving, from the diary server, new diary information; changing an appearance of the diary page without changing content of the diary page, in accordance with the new diary information.

17. An apparatus that displays and organizes information, comprising:

a software portion configured to receive, by a user system from a diary server, a diary program capable of being run by a browser in the user system;

a software portion configured to receive, by the user system from the diary server, diary information comprising content data including an associated time, a page design to specify the presentation of the content data, and configuration information for controlling behavior of a cohesive diary page, the configuration information including privacy level information;

a software portion configured to assemble the cohesive diary page by dynamically combining the content data and the page design in accordance with the configuration information; and

a software portion configured to display the cohesive diary page, by the diary program running in the browser.

18. The apparatus of claim 17, further comprising:

a portion configured to display contents of the diary page by the diary program in accordance with a cover for a diary.

19. The apparatus of claim 18, wherein the cover includes advertisements requested by a user.

20. The apparatus of claim 18, wherein the cover includes advertisements not requested by a user.

21. The apparatus of claim 18, wherein the cover includes product placements determined by a cover provider.

22. The apparatus of claim 18, wherein the cover is created by a cover provider.

23. The apparatus of claim 17, wherein the diary page includes a reference to a content object created by a third party content provider.

26

24. The apparatus of claim 17, wherein the diary page includes a reference to a content object created by a diary owner.

25. The apparatus of claim 17 further comprising:

a portion configured to display a plurality of diary pages, where each diary page presents content data and configuration information as an integrated whole.

26. The apparatus of claim 17 further comprising:

a portion configured to receive, from the diary server, new diary information;

a portion configured to change content of the diary page without changing a general appearance of the diary page, in accordance with the new diary information.

27. The apparatus of claim 17 further comprising:

a portion configured to receive, from the diary server, new diary information;

a portion configured to change an appearance of the diary page without changing content of the diary page, in accordance with the new diary information.

28. A computer program product comprising computer program code on a computer readable medium for displaying and organizing information, the computer program product comprising:

computer program code for receiving, by a user system from a diary server, a diary program capable of being run in a browser in the user system;

computer program code for receiving, by the user system from the diary server, diary information comprising content data including an associated time, a page design to specify the presentation of the content data and configuration information for controlling behavior of a cohesive diary page, the configuration information including privacy level information;

computer program code for assembling the cohesive diary page by dynamically combining the content data and the page design in accordance with the configuration information; and

computer program code for displaying the cohesive diary page, by the diary program, running in the browser.

29. The computer program product of claim 28, further comprising:

program code for displaying contents of the diary page by the diary program in accordance with a cover for a diary.

30. The computer program product of claim 29, wherein the cover includes advertisements requested by a user.

31. The computer program product of claim 29, wherein the cover includes advertisements not requested by a user.

32. The computer program product of claim 29, wherein the cover includes product placements determined by a cover provider.

33. The computer program product of claim 29, wherein the cover is created by a cover provider.

34. The computer program product of claim 28, wherein the diary page includes a reference to a content object created by a third party content provider.

35. The computer program product of claim 28, wherein the diary page includes a reference to a content object created by a diary owner.

36. The computer program product of claim 28 further comprising:

program code for displaying a plurality of diary pages, where each diary page presents content data and configuration information as an integrated whole.

37. The computer program product of claim 28 further comprising:

program code for receiving, from the diary server, new diary information;

A000111

US 6,415,316 B1

27

program code for changing content of the diary page without changing a general appearance of the diary page, in accordance with the new diary information.

38. The computer program product of claim 28 further comprising:

program code for receiving, from the diary server, new diary information;

program code for changing an appearance of the diary page without changing content of the diary page, in accordance with the new diary information.

39. A system for displaying and organizing information comprising:

means for receiving, by a user system from a diary server, a diary program capable of being run by a browser in the user system;

28

means for receiving, by the user system from the diary server, diary information comprising content data including an associated time, a page design to specify the presentation of the content data, and configuration information for controlling behavior of a cohesive diary page, top configuration information including privacy level information;

means for assembling the cohesive diary page by dynamically combining the content data and the page design in accordance with the configuration information; and

means for displaying a diary page, by the diary program running in the browser.

* * * * *

UNITED STATES PATENT AND TRADEMARK OFFICE
CERTIFICATE OF CORRECTION

PATENT NO. : 6,415,316 B1
DATED : July 2, 2002
INVENTOR(S) : Joannes Jozef Everardus van der Meer

Page 1 of 1

It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

Column 24,

Line 54, replace “;” with a -- : --.

Line 55, replace the word “use” with -- user --.

Column 26,

Line 30, add -- , -- after the word “data”.

Column 28,

Line 6, replace “top” with the word -- the --.

Signed and Sealed this

Twelfth Day of November, 2002

Attest:

A handwritten signature in black ink, appearing to read 'James E. Rogan', with a horizontal line drawn underneath it.

Attesting Officer

JAMES E. ROGAN
Director of the United States Patent and Trademark Office

(12) **United States Patent**
Van Der Meer

(10) **Patent No.:** **US 6,289,362 B1**
(45) **Date of Patent:** **Sep. 11, 2001**

(54) **SYSTEM AND METHOD FOR GENERATING, TRANSFERRING AND USING AN ANNOTATED UNIVERSAL ADDRESS**

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(73) Assignee: **Aidministratoir Nederland B.V.**, Amersfoort (NL)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

(21) Appl. No.: **09/144,717**

(22) Filed: **Sep. 1, 1998**

(51) Int. Cl.⁷ **G06F 17/00**

(52) U.S. Cl. **707/501; 709/200; 709/213; 709/217; 709/218**

(58) **Field of Search** **382/178; 345/329; 707/2, 100, 4, 501, 503, 505–508, 512; 709/213, 217, 218, 200**

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Primary Examiner—Mark H. Rinehart

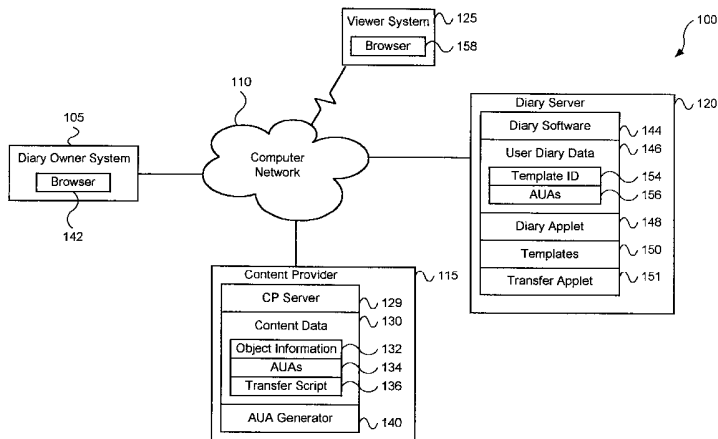
Assistant Examiner—Farzaneh Farahi

(74) *Attorney, Agent, or Firm*—Fenwick & West LLP

(57) **ABSTRACT**

A system enables a user to maintain a catalog of network objects of interest to the user. The system comprises a diary owner system, a diary server and content providers, each coupled to a computer network. Each content provider includes presentable objects, annotated universal addresses which identify the objects and have annotations for controlling aspects of the objects or addresses, and transfer scripts enabling the transfer of the annotated universal addresses to the diary server. The diary server maintains the annotated universal addresses and presentation context information for subsequent retrieval. Accordingly, a diary owner or other user can access the annotated universal addresses and presentation context information to present the diary. Since content providers generate the annotations within the annotated universal addresses, the content provider can control aspects of the objects from within the user's diary. Since the presentation context information is separated from the content, presentation context can easily be modified.

24 Claims, 16 Drawing Sheets



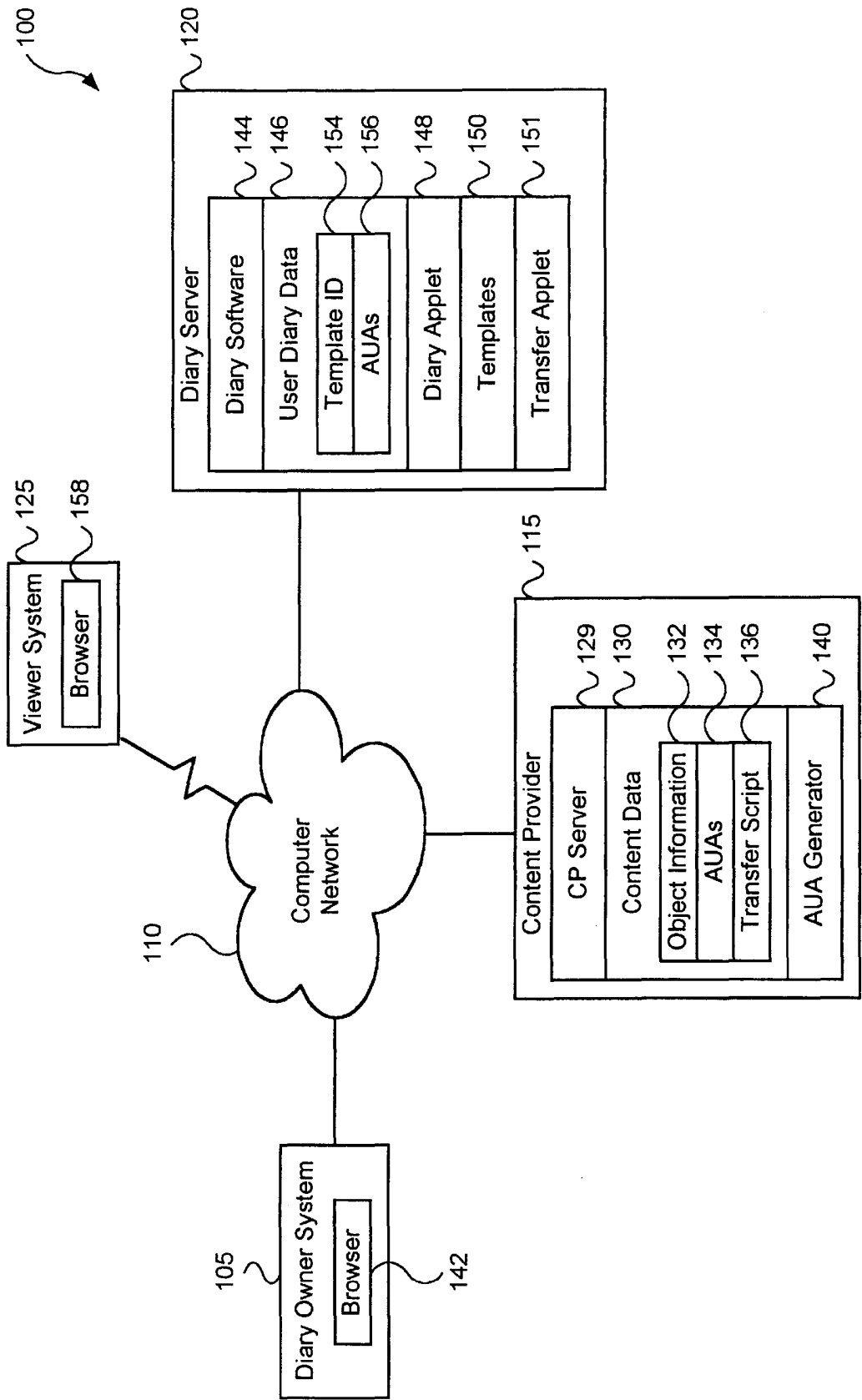


Figure 1

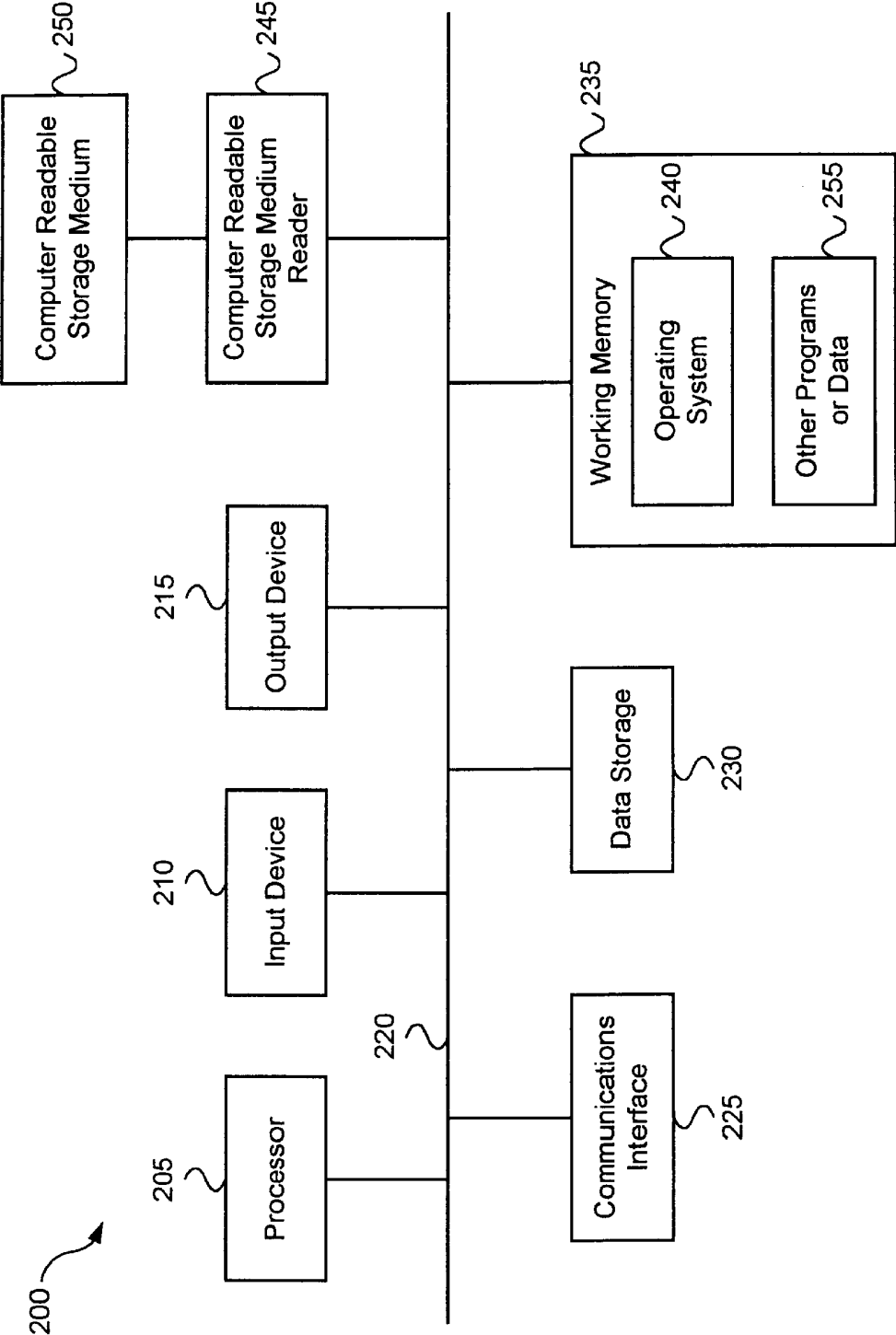
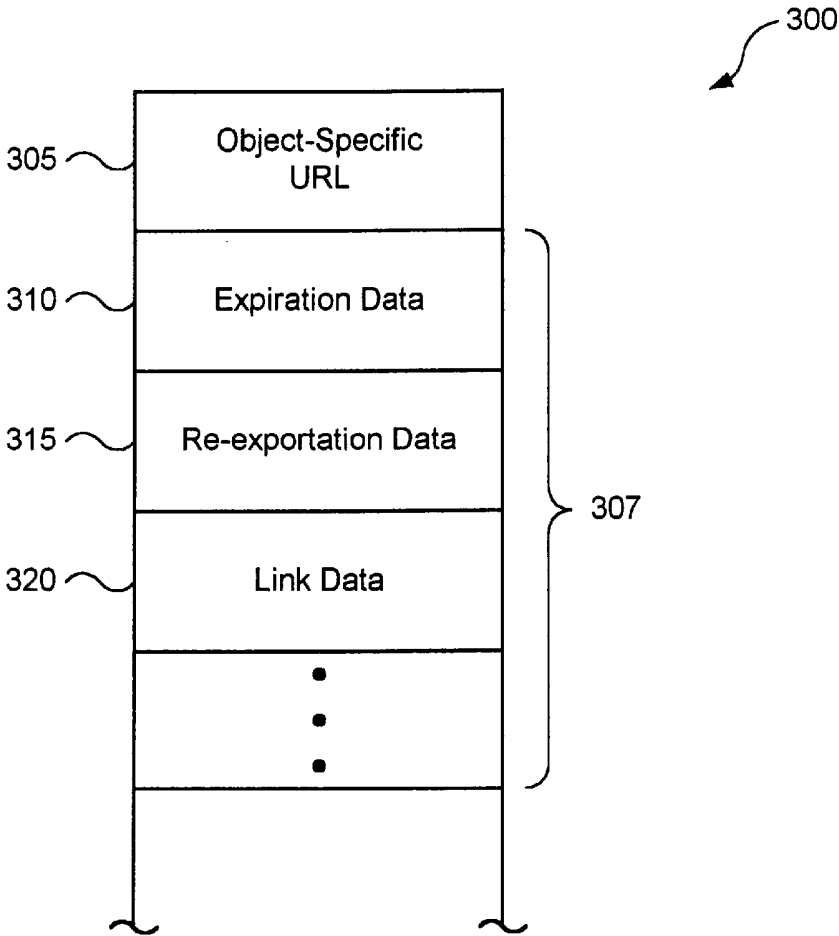
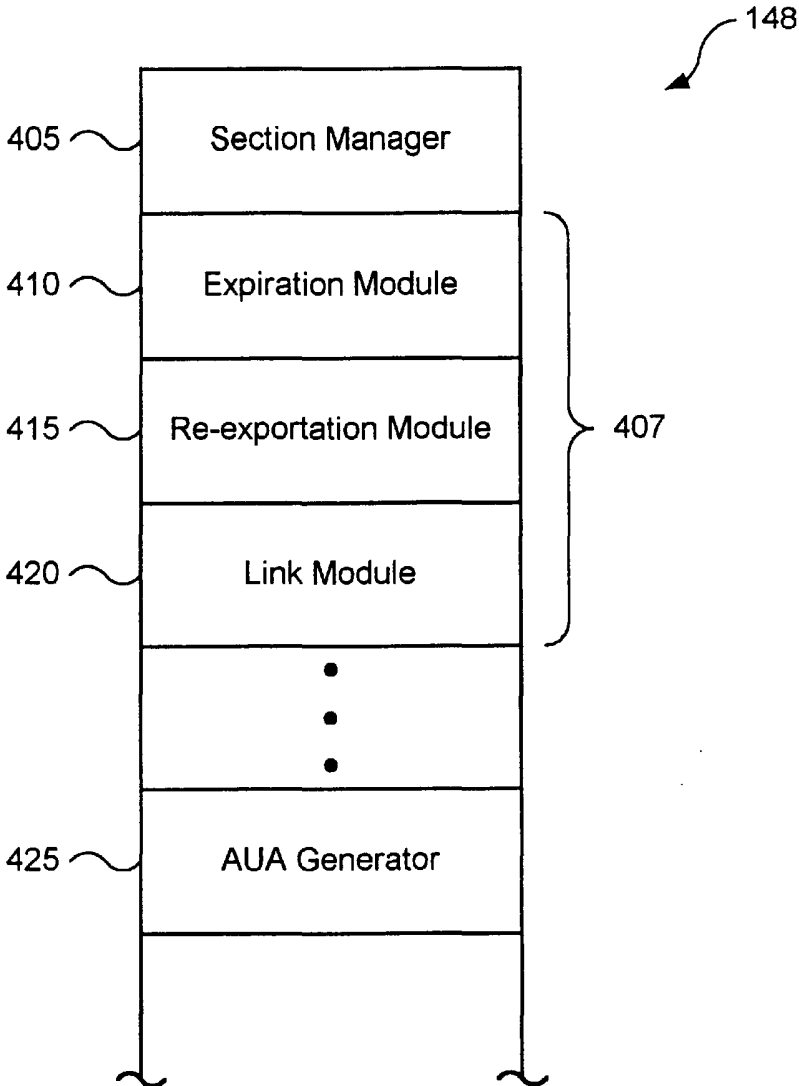


Figure 2



(AUA)

Figure 3



(Diary Applet)

Figure 4

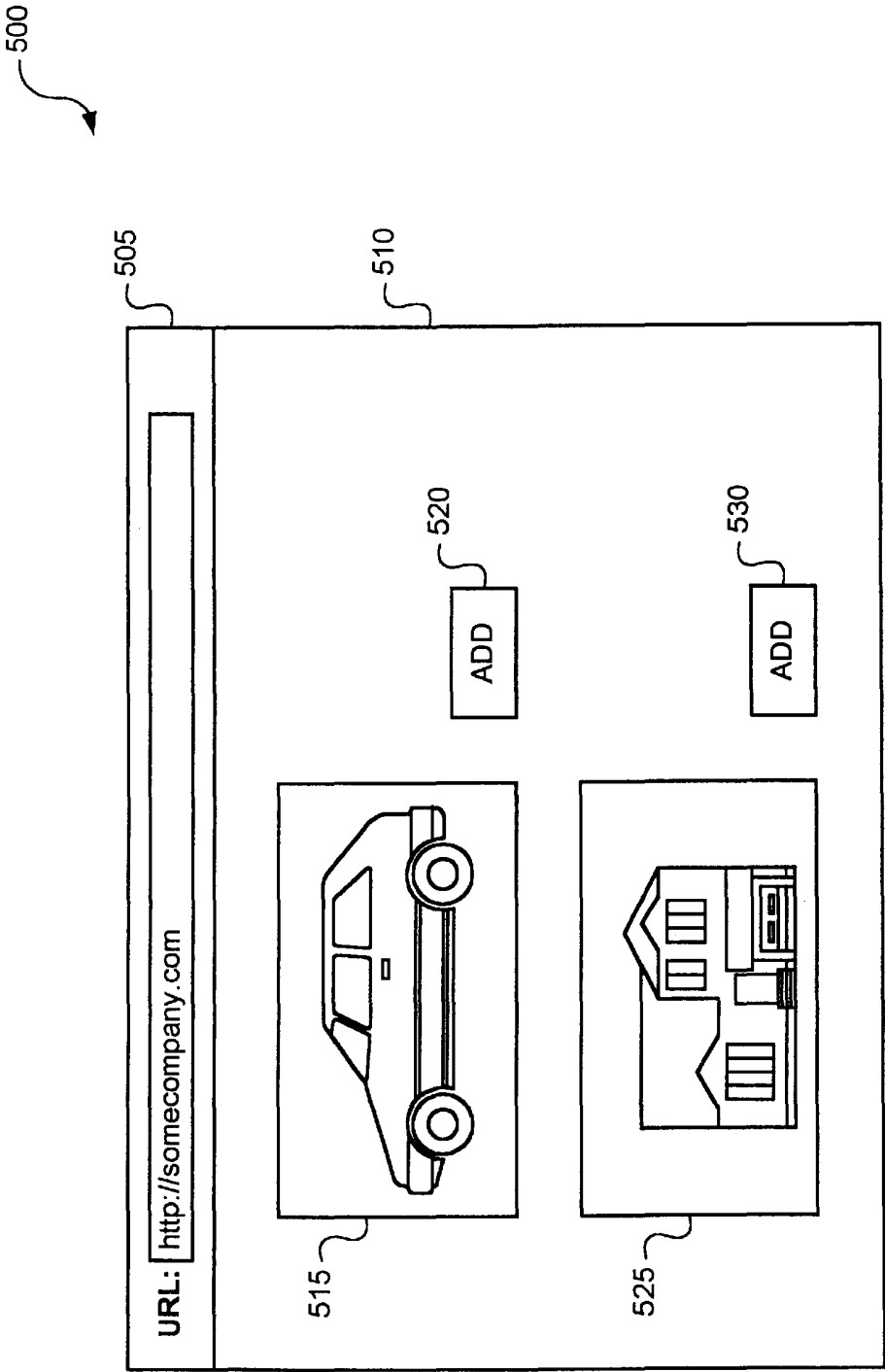


Figure 5

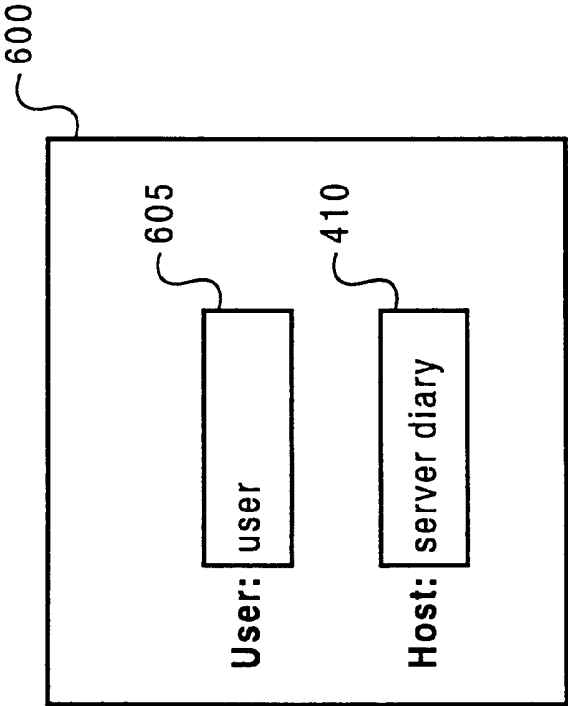


Figure 6

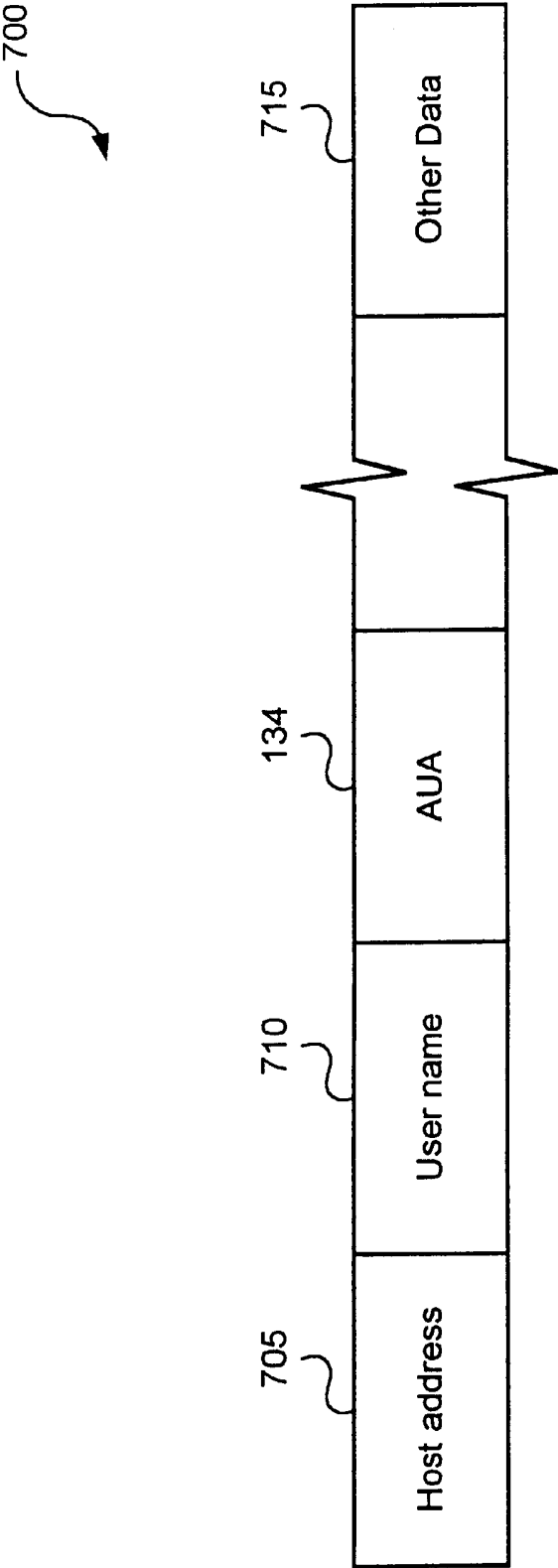


Figure 7

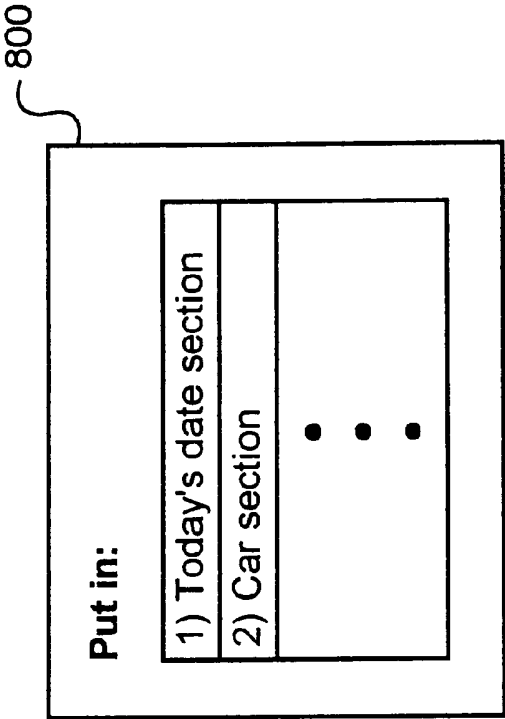


Figure 8

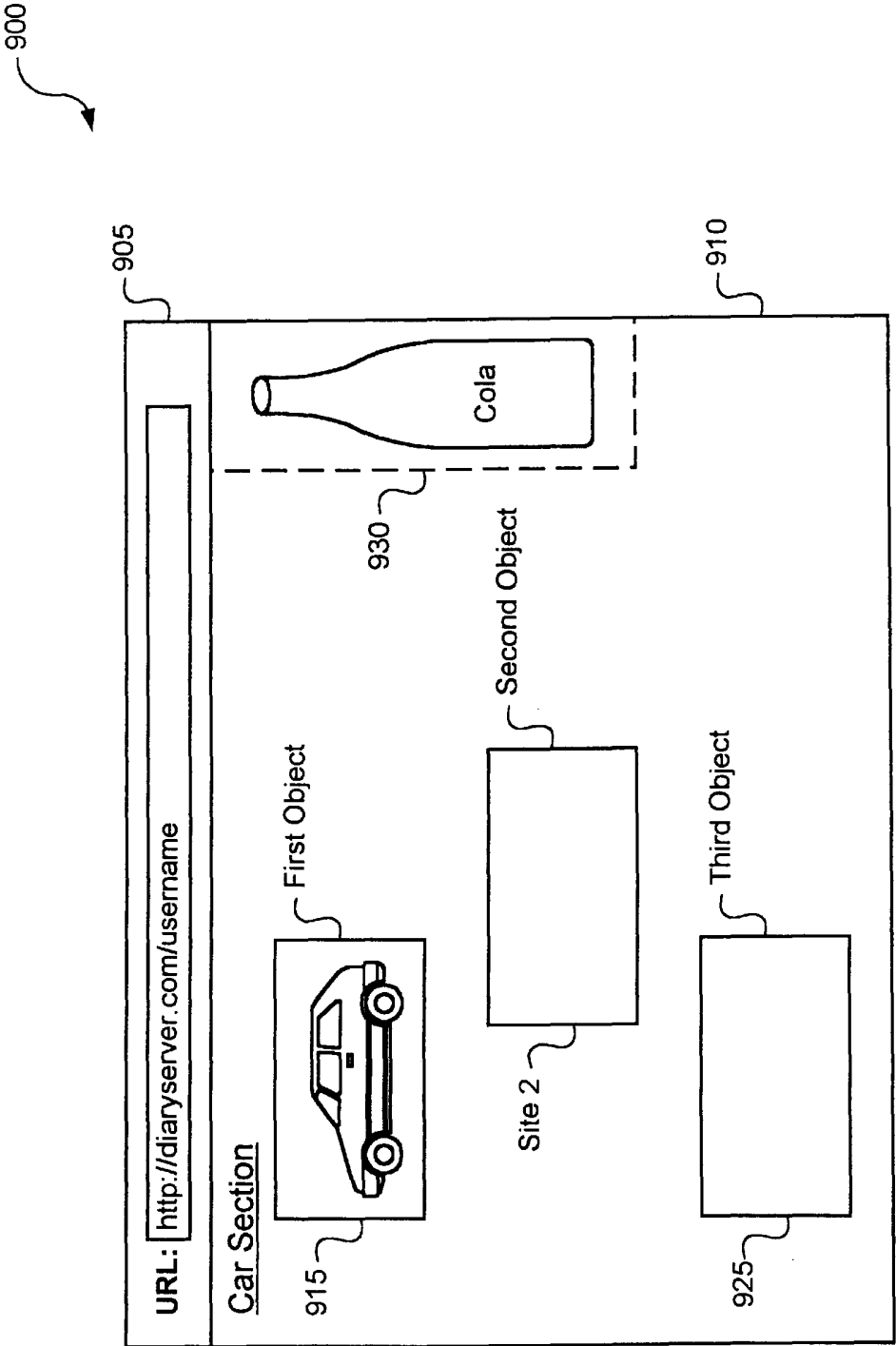
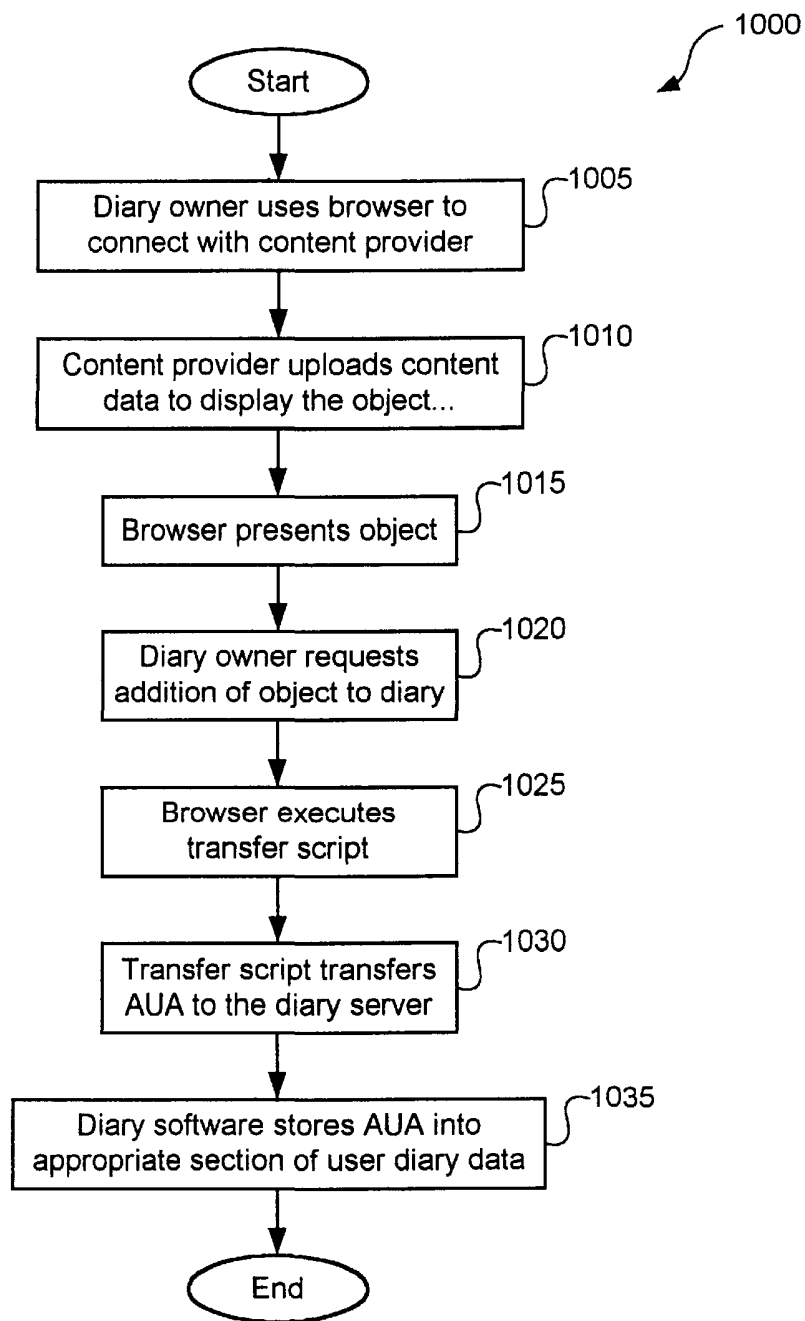


Figure 9



(Add AUA)

Figure 10

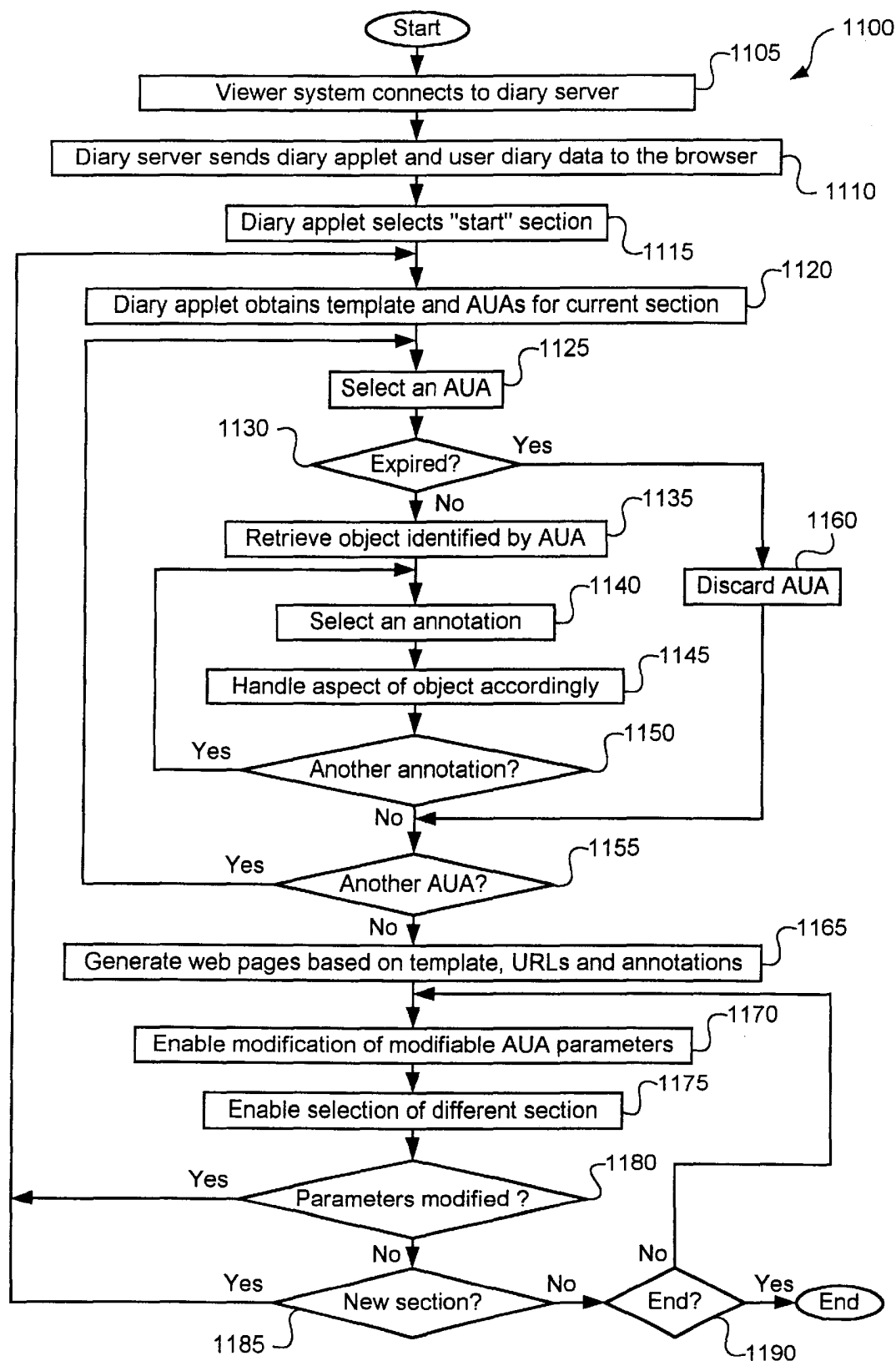


Figure 11

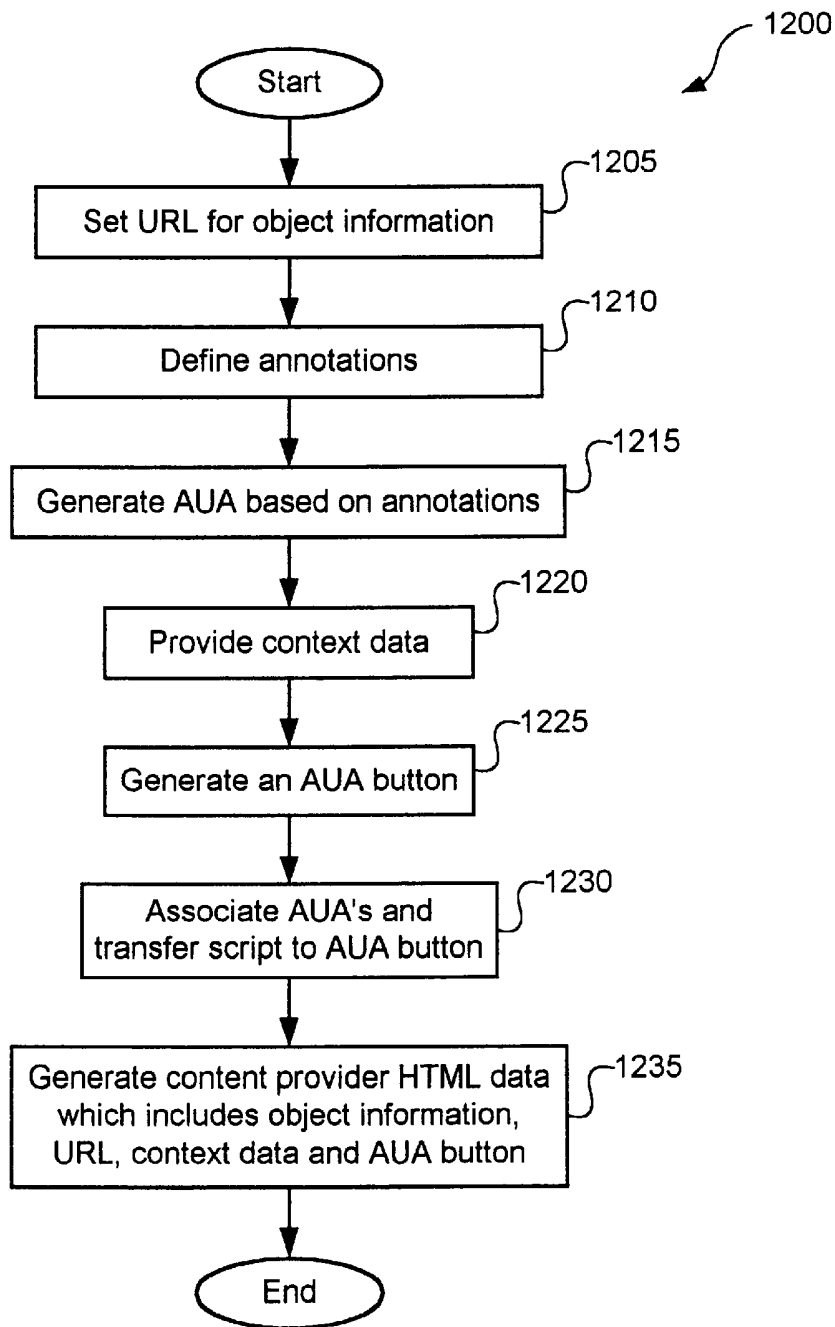


Figure 12

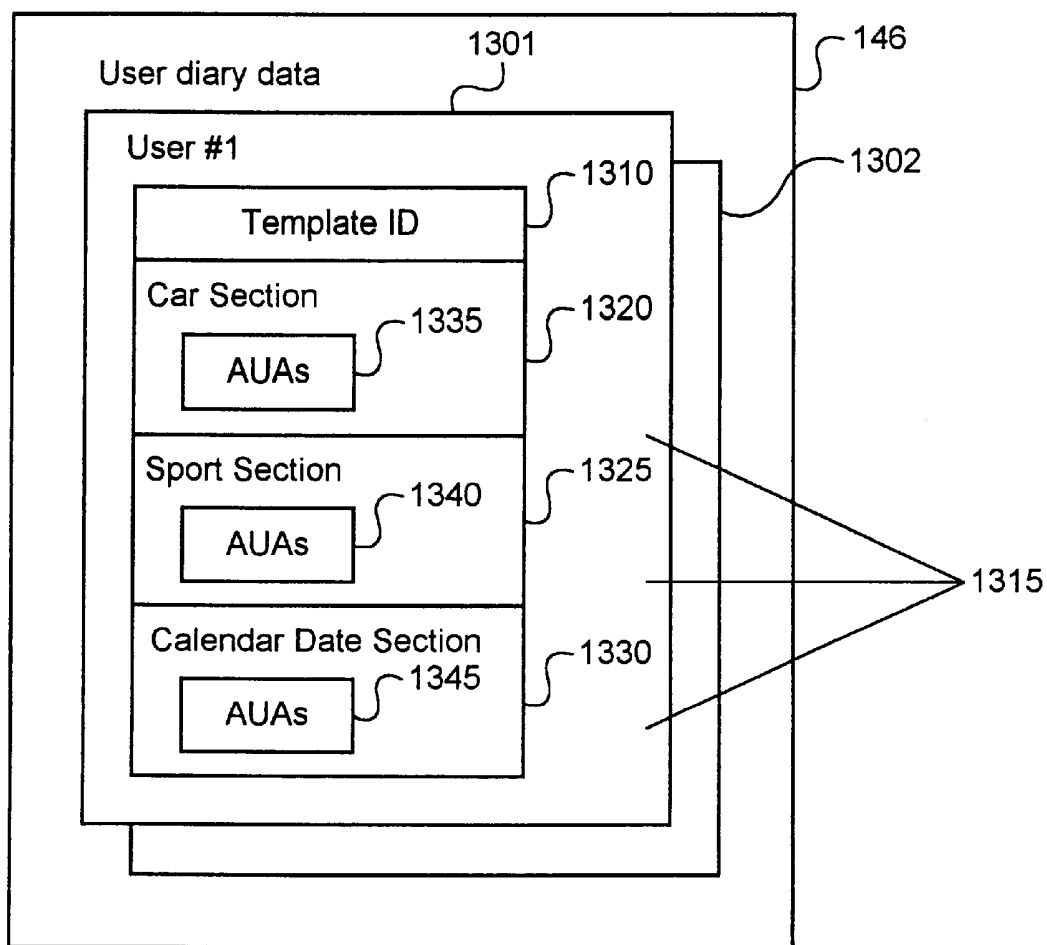


Figure 13

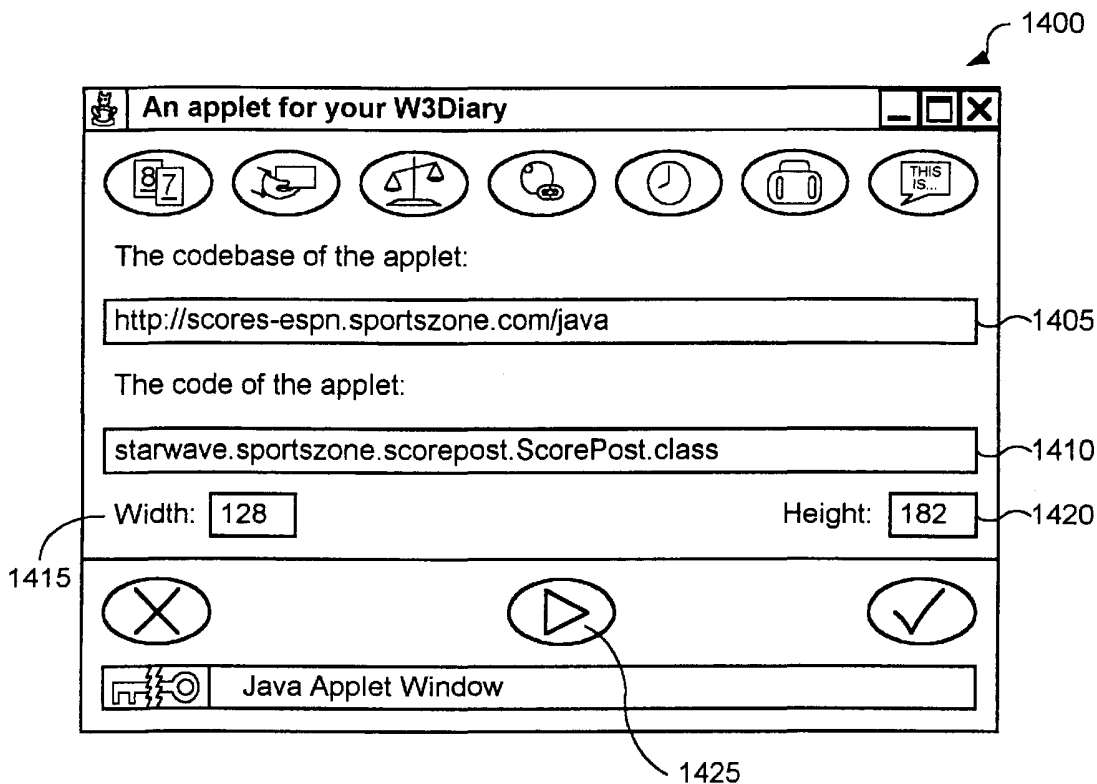


Figure 14

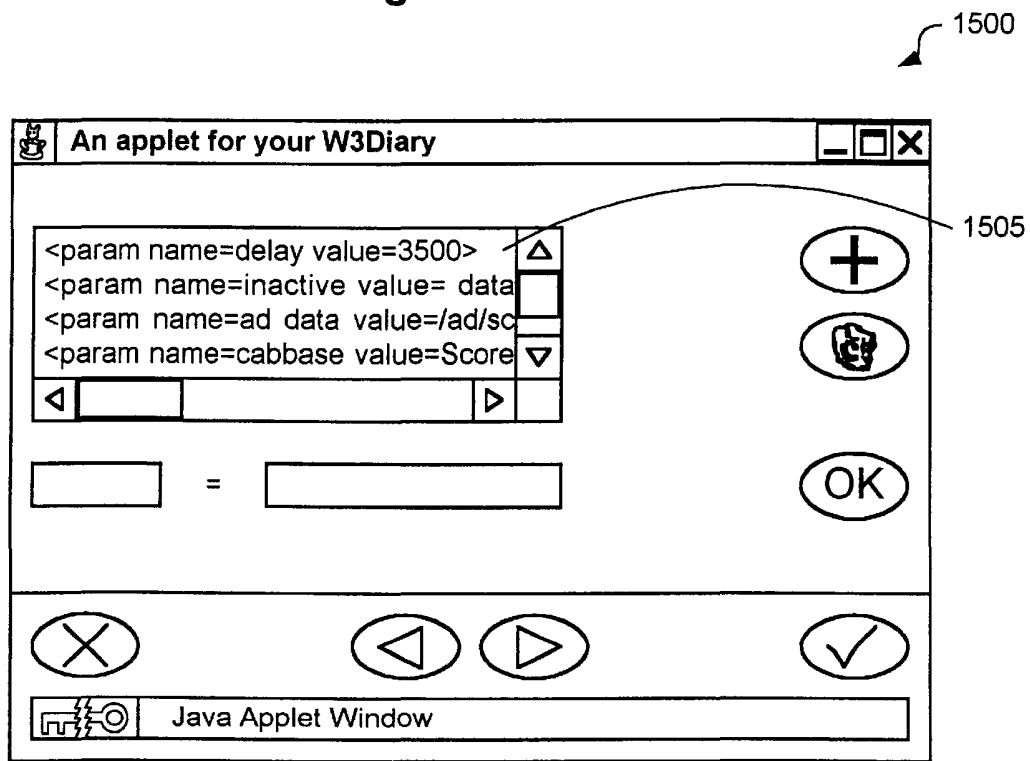
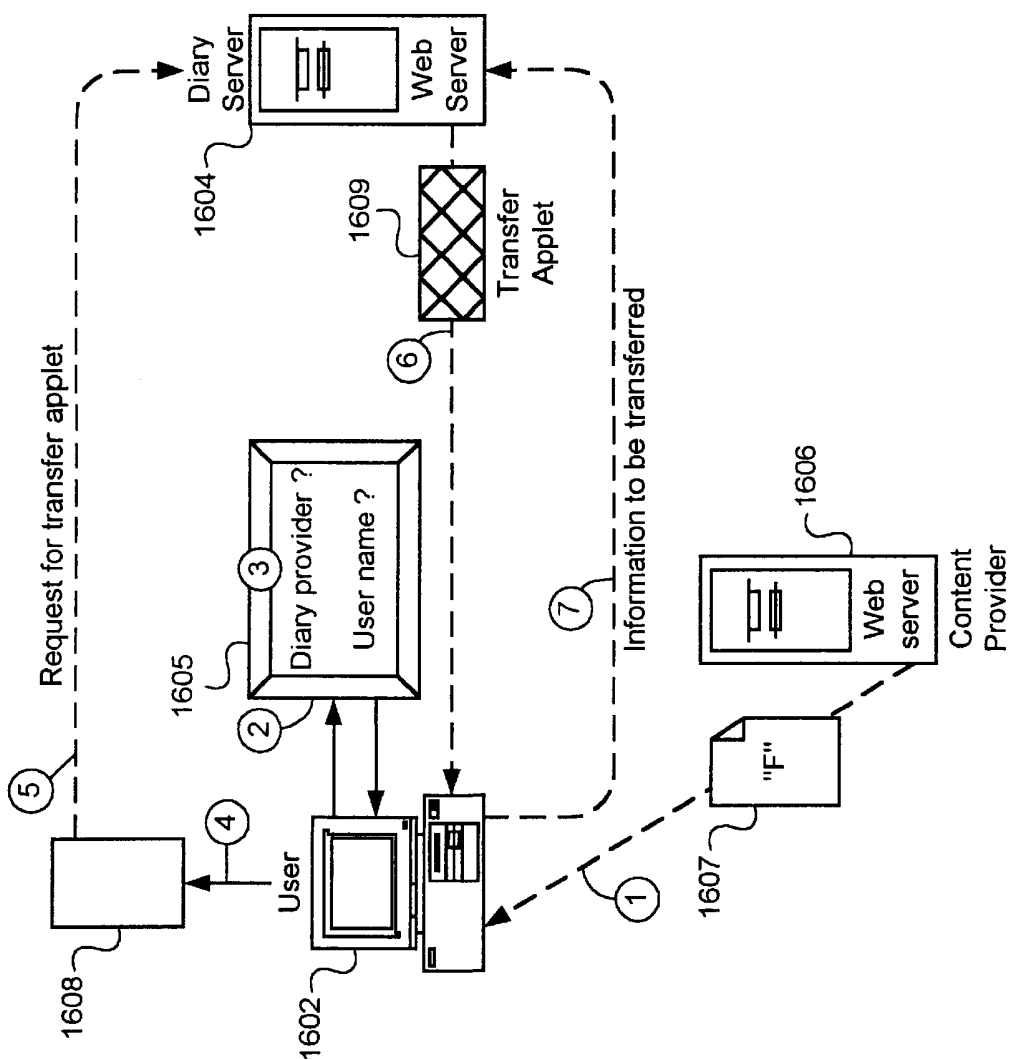
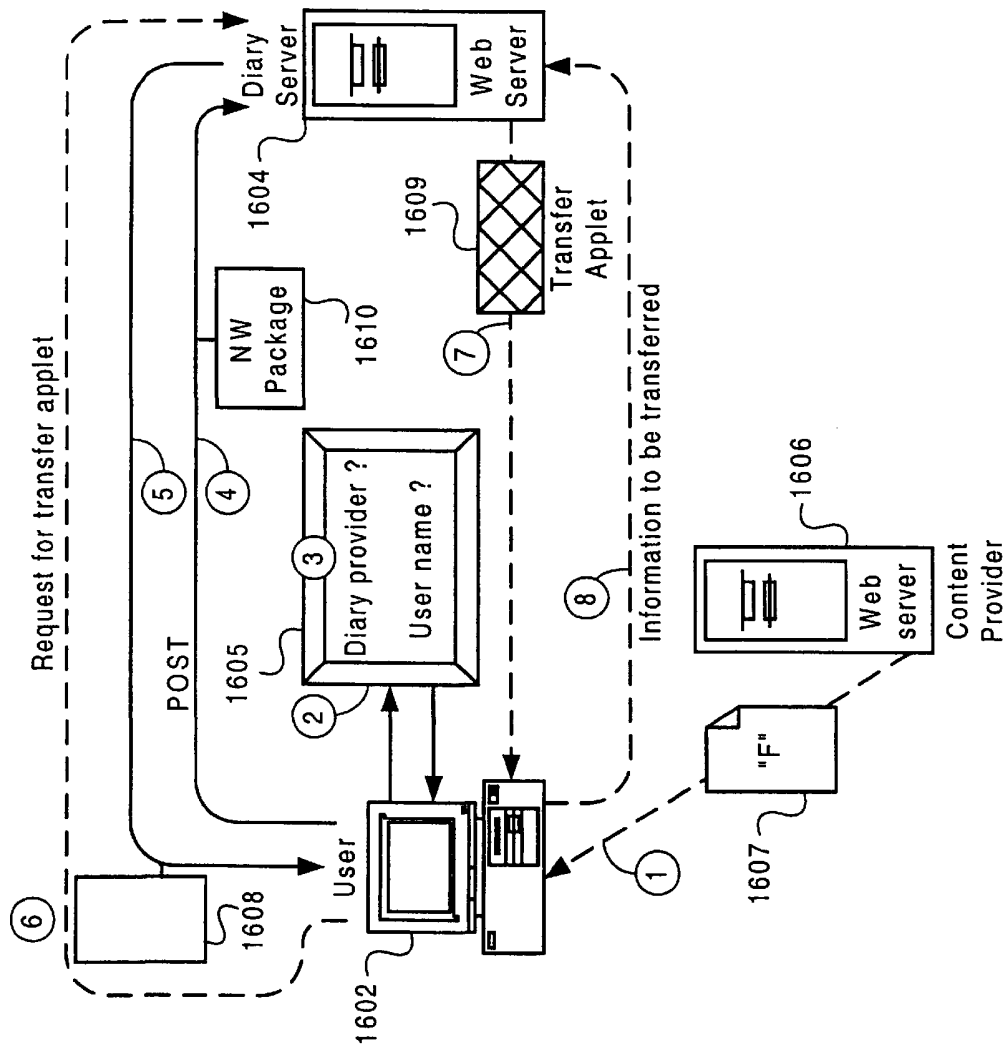


Figure 15



Content Transfer
Figure 16



Content Transfer
Figure 17

US 6,289,362 B1

1

SYSTEM AND METHOD FOR GENERATING, TRANSFERRING AND USING AN ANNOTATED UNIVERSAL ADDRESS

INCORPORATION BY REFERENCE TO COPENDING APPLICATION(S)

This application is related to the following applications, filed concurrently herewith, each of which is incorporated herein in its entirety.

1. U.S. patent application Ser. No. 09/144655, entitled "Method and Apparatus for Implementing a Web Page Diary" of Joannes van der Meer.

2. U.S. patent application Ser. No. 09/144786, entitled "Method and Apparatus for HTML Control" of Joannes van der Meer.

3. U.S. patent application Ser. No. 09/144793, entitled "Method and Apparatus for Communicating With a Server" of Joannes van der Meer.

BACKGROUND OF THE INVENTION

1. Field of the Invention

This invention relates generally to computer networks, and more particularly provides a system and method for generating, transferring and using annotated universal addresses which can be presented by multimedia presentation tools, including internet browsers.

2. Description of the Background Art

One of the latest means of communication to obtain truly widespread acceptance is the medium known as the Internet. A global network, connecting millions of computers, the Internet is rapidly becoming the 'ultimate' way of communication. Still, it has quite a few drawbacks. Some, like its speed (or lack thereof), are readily apparent to the regular user.

In real life, we (consciously or unconsciously) 'judge a book by its cover', i.e. we form an opinion about other people based on how they present themselves, through their style of clothing, the car they drive, their hobbies and interests, and the people they admire or detest. Users of the Internet find it virtually impossible to present themselves, other than through what they 'say' in email, on newsgroups, etc. Technical users have some ability to present themselves through their web sites. However, setting up and maintaining such a presence on the web requires talents from many different disciplines, including Computer Science, Human-Computer Interface design, graphic design, fine art, and writing. It is obvious from many examples available on the web today, that not all users have all of these skills in equal proportions. As such, the Internet is essentially a faceless medium, meaning you hardly know who you're dealing with.

In the real world, when we visit a place we like, we often take home some tangible memory of that place, like photographs or souvenirs. On the web, we don't really have that option. The only 'memories' we might have of where on the web we have been last week, are some rather inexpressive bookmarks that say "Welcome to the homepage of Some-Company" (or even worse: <http://www.somecompany.com/>). Such references give us no (sensory) clue whatsoever as to why we liked that particular place on the web, and whether or not we might like to visit again in the future. In this sense, our exploits on the web are rather volatile; i.e. we don't have anything 'tangible' by which to remember our travels.

SUMMARY OF THE INVENTION

The present invention provides a system and method for generating, transferring and using annotated universal

2

addresses which can be presented by multimedia presentation tools, including internet browsers.

The system and method enable a user to maintain an ordered set of network object links (annotated universal addresses or AUAs) in an AUA database. The contents of the AUA database are presented to the user within a presentation context (e.g., template format). The system allows the user to select a different presentation context without effecting the contents of the AUA database. One of the types of presentation contexts is organized like a diary or agenda. Each context may include theme sections (e.g., car section, sport section, personal finance section, etc.) and sections per day. All of the sections optionally may be organized by time.

The system comprises a server which acts both as the AUA database server and as a presentation context server. Alternatively, this server may be divided into two separate servers. The system further includes an owner system and content providers. Each content provider includes descriptions of presentable objects, AUAs which identify the location of the objects (the universal address part of the AUA) and have annotations for controlling aspects of the objects. Each content provider also includes transfer scripts enabling the transfer of the AUAs to the AUA database server. The AUA database and presentation context server maintains the AUAs in a per user AUA database and maintains template formats (presentation contexts that are to be shared by all users that have selected the same presentation context for their AUA database) for subsequent retrieval. Accordingly, the AUA database owner or other user can access the AUAs and the template information to have the AUAs presented. Since content providers have defined the annotations within the AUA, the content provider controls certain aspects of the objects as they are presented to the owner and any other user.

One embodiment provides a method which includes the steps of receiving a request from a client for both an AUA database and an associated presentation context, identifying the template and AUA database corresponding to the request, the annotated universal address including a universal address identifying a location of an object and including an annotation for controlling an aspect of the object, and transmitting the format information and the annotated universal address to the client.

Another embodiment provides a method which includes the steps of requesting access to an AUA database on a server, receiving format information and an annotated universal address from the server, the annotated universal address including a universal address identifying a location of an object and including an annotation for controlling an aspect of the object, generating network data using the format information and the AUA, and retrieving the object specified by the universal address part of the AUA.

Yet another embodiment provides a method which includes the steps of specifying a universal address to identify a location of an object, generating an annotation for controlling an aspect of the object, associating the universal address with the annotation to generate an annotated universal address, associating a request interface with the annotated universal address, generating network data for presenting the object and the request interface, and enabling transfer of the annotated universal address upon receiving an indication at the request interface.

Still another embodiment provides a method which includes the steps of requesting addition of an annotated universal address to an AUA database, on a server, receiving a transfer script in response to the request, initiating execution of the transfer script to request a transfer applet from the

server, and initiating execution of the transfer applet to transfer the annotated universal address to the AUA database on the server.

The system and method of the present invention may advantageously enable a user to maintain an AUA database and a presentation context associated with it. This enables a user to maintain for instance a more exciting catalog (“diary”, “agenda” or any other presentation context) of web sites or objects available from the web sites. The system and method enable the diary owner to provide other user’s with access to the owner’s AUA database and presentation context. The system and method enable a diary owner to change formats among several available formats. The system and method enable a content provider to create AUAs for objects at his web site, to have these AUAs transferred from the web site by a user to the user’s database, and to have a new access path to the object from within the presentation context associated with the user’s database. The system and method advantageously enable a content provider to target more appropriate users with advertisements. The system and method enable a content provider to maintain some control of the objects displayed at the user’s diary.

BRIEF DESCRIPTION OF THE DRAWINGS

- FIG. 1 is a block diagram illustrating a network system, in accordance with the present invention;
- FIG. 2 is a block diagram illustrating a computer system of FIG. 1;
- FIG. 3 is a block diagram illustrating details of an AUA of FIG. 1;
- FIG. 4 is a block diagram illustrating details of the diary applet of FIG. 1;
- FIG. 5 illustrates an example web page provided by a content provider of FIG. 1;
- FIG. 6 illustrates a window requesting a diary server address for storing a requested AUA;
- FIG. 7 is a block diagram illustrating a message packet created by the transfer script of FIG. 1;
- FIG. 8 illustrates a window requesting the section name in which to store A received AUA;
- FIG. 9 illustrates a window of the car section of user diary data;
- FIG. 10 is a flowchart illustrating a method of adding an AUA to the diary server, in accordance with the present invention;
- FIG. 11 is a flowchart illustrating a method of using AUAs to generate diary web pages for a section;
- FIG. 12 is a flowchart illustrating a method of generating an AUA;
- FIG. 13 is a block diagram illustrating details of user diary data;
- FIG. 14 illustrates a window enabling a diary owner system to input an object to be included in an annotated universal address;
- FIG. 15 illustrates a window enabling a diary owner to input annotations to be associated with the object and included in the annotated universal address;
- FIG. 16 is a block diagram illustrating transfer operations in a first embodiment; and
- FIG. 17 is a block diagram illustrating transfer operations in a second embodiment.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

FIG. 1 is a block diagram illustrating an example network system 100 in accordance with the present invention. The

network system 100 includes a diary owner system 105 coupled via a computer network 110, e.g., the Wide Area Network (WAN) commonly referred to as the Internet 110, to a content provider 115. A diary server 120 and a viewer system 125 are also coupled to the computer network 110. The diary owner 105 maintains a computer diary on the diary server 120. The content providers 115 use annotated universal addresses to control aspects of the diary content.

The content provider 115 is a computer system that stores content data 130 for browsers to use. The content data 130 includes object information 132, which may be an image, text, a movie, an applet, etc., or a link thereto, for browsers to present. It is intended herein that the term “presenting” cover displaying, performing, manipulating or other multi-media action performed by a browser. The content data 130 further includes annotated universal addresses (AUAs) 134 which both identify a universal address (URL) of the object information 132 and specify aspects of how the universal address or object information 132 should be handled by the diary server 120 or user. AUAs 134 will be described in greater detail with reference to FIG. 3. The content data 130 further includes a transfer script 136 that, when executed by the browser 142, enables the transfer of the an AUA 134 to the diary server 120. It will be appreciated that sending the AUA 134 to the diary server 120 enables the content provider 115 to control aspects of the resulting object as they are presented to the owner and any other user (in the presentation context specified by the template). The content provider 115 further includes a content provider (CP) server 129, which has a web server (not shown) for communicating with a browser, and includes an AUA generator 140 for generating the AUAs 134. The AUA generator 140 is described in greater detail with reference to FIG. 12. Alternative to an AUA generator 140 on the content provider, the AUA generator 140 may be stored on the diary server 120 and executed thereon.

The diary server 120 is a computer system which includes diary software 120, which has a web server (not shown) for communicating with a browser and with the content provider 115. The diary software 120 receives the AUAs 134 being transferred from the content provider 115, and stores them in an AUA database (labeled AUAs) 156 in user diary data 146. User diary data 146 also includes a template identification (ID) 154, which specifies a template 150 stored in the diary server 120. Each template 150 identifies a format for diary pages, and identifies objects (such as cartoon characters, company advertisements, etc.) to be presented on the diary pages. It will be appreciated that the templates 150 may alternatively be stored on a presentation context server (not shown) in communication with the diary server 120. For example, a template 150 may be created by a particular corporation wanting to advertise and thus offering a presentation context for a user to select. The template 150 may be stored on a presentation context server operated by the corporation and downloaded in accordance with the template ID 154 in the page definition. It will be appreciated that, although the embodiment is being described as using templates 150, any means for presenting data in a presentation context may be used. User diary data 146 is described in greater detail with reference to FIG. 13.

The diary server 120 further includes a diary applet 148, which may be downloaded via the computer network 110 to any browser for presenting the user diary data 146. The diary applet 148 is described in greater detail with reference to FIG. 4. Although the system 100 is being described with reference to Java applets, it will be appreciated that any executable or interpretable application code, which is down-

US 6,289,362 B1

5

loaded from a source computer and run on a destination computer, may alternatively be used. Other downloadable code may include JavaScript™ scripts developed by Netscape Communication, Inc., ActiveX™ controls designed for use in the ActiveX™ distributing environment developed by the Microsoft Corporation, Visual Basic also developed by the Microsoft Corporation, plugins which add to the functionality of an already existing application program, etc. It will be further appreciated that one or more applets, one or more ActiveX controls, one or more plugins, etc. or combinations thereof may alternatively be used. The term “applet” is being used herein to include any downloadable code format.

The diary owner system 105 is a computer system which stores and operates a browser 142, such as the Netscape Navigator® browser by Netscape Corporation or the Internet Explorer® browser by Microsoft Corporation. To initiate a diary presentation context, the diary owner system 105 via the browser 142 contacts the diary server 120 to open a user database, and to select a template 150 (i.e., a presentation context or format). The diary software 144 (which may be implemented as one or more applets) allows the user to select a particular section, to browse through various sections, to show a particular AUA, etc. For each page, the diary software 144 generates a page definition using a network-based publishing language (NBPL) such as HTML and instructs the browser to present the page corresponding to the page definition to the user.

The diary owner system 105 via the browser 142 contacts a content provider 115 to view content data 130, or more particularly to view the object information 132. If the user of the diary owner system 105 decides that object information 132 is worthy of adding to the diary on the diary server 120, the user may provide an indication of interest to a request interface, e.g., by performing a mouse-down event while the mouse pointer is over a virtual button on the web page provided by the content provider 115. Accordingly, the content provider 115 transfers the AUAs 134 corresponding to the user's selection to the diary server 120. Since an applet is limited to setting up a communications link with only the originator of the applet, it will be appreciated that transferring the AUA 134 to the diary server 120 may include a level of indirection. That is, the content provider 115 via the CP server 129 may forward a transfer script 136 to the browser 142 on the diary owner system 105. The browser 142 executes the transfer script 136, which generates a request (e.g., a post request) for the diary server 120 to download a transfer applet 151. It will be appreciated that the request may be implemented by generating a web page containing the request. The transfer applet 151 can establish a communications link with the diary server 120 (for storage of the new AUAs, e.g., as part of a storage operation of the full user diary data 146) and can establish a communications link with the diary applet 148 on the diary owner system 105 to point out the newly added AUAs 156 (for immediate presentation at the diary owner system 105).

The diary owner system 105 via the browser 142 or the viewer system 125 via the browser 158 may contact the diary server 120 to request viewing particular user diary data 146. The diary software 144 uploads the user diary data 146, the diary applet 148 and the appropriate template 150 to the requesting browser 142, 158. The requesting browser 142, 158 executes the diary applet 148, which generates HTML data ‘on the fly’ from the template 150 and from the AUAs 156 contained in the requested user diary data 146. It will be appreciated that the diary server 120 enables the diary owner system 105 to select different templates 150 on the fly, so

6

that a different diary formats can be used. Generating the HTML data from AUAs is described in greater detail with reference to FIG. 11.

Representative organization of the user diary data 146 is illustrated in and described with reference to FIG. 13. It will be further appreciated that the viewer system 125 exemplifies any system connected to the computer network 110 that includes a browser.

FIG. 2 is a block diagram illustrating a computer system 200 which illustrates details of each of the diary owner system 105, the content provider 115, the diary server 120 and the viewer system 125. The computer system 200 includes a processor 205, such as an Intel Pentium® micro-processor or a Motorola Power PC® microprocessor, coupled to a communications channel 220. The computer system 200 further includes an input device 210 such as a keyboard and mouse, an output device 215 such as a Cathode Ray Tube (CRT) display, a communications device 225, data storage 230 such as a magnetic disk, and working memory 235 such as Random-Access Memory (RAM), each coupled to the communications channel 220. The communications channel 220 is coupled to the computer network 110. One skilled in the art will recognize that, although the data storage 230 and working memory 235 are illustrated as separate units, data storage 230 and working memory can be integrated or partially integrated units.

An operating system 240 controls processing by the processor 205, and is typically stored in data storage 230 and loaded into working memory 235 (as illustrated) for execution. Other programs or data 255 such as browsers, servers, applets, scripts, content data, etc. may also be loaded into working memory 235 (as illustrated) for execution by processor 205. The programs or data 255 may be loaded via the communications interface 225 or via the data storage 230. One skilled in the art will also recognize that the programs or data 255 may be received by and stored in the system in alternative ways. For example, a computer-readable storage medium (CRSM) reader 245 such as a floppy disk drive, hard disk drive, CD-ROM reader, magneto-optical reader, CPU (for RAM), etc. may be coupled to the communications channel 220 for reading a computer-readable storage medium (CRSM) 250 such as a magnetic disk, a hard disk, a magneto-optical disk, RAM, etc. Accordingly, the system 200 may receive programs or data 255 via the CRSM reader 240.

One skilled in the art will recognize that the computer system 200 may also include additional information, such as network connections, additional memory, additional processors, LANs, input/output lines for transferring information across a hardware channel, the Internet or an Intranet, etc.

FIG. 3 is a block diagram illustrating details of an AUA 300, such as the AUA 134 stored on the content provider 115. The AUA 300 includes an object-specific universal address (e.g., a uniform resource locator or URL) 305, which identifies object information 132 such as an image, text, applet, etc. The AUA 300 further includes annotations 307, which indicate how to handle some aspect of the object information 132 or the universal address 305. The example annotations 307 listed include expiration data 310 defining the date which the content provider 115 no longer guarantees the existence of the object, re-exportation data 315 indicating whether the content provider 115 enables the diary applet 148 to export the AUA 156 from the diary server 120 exactly as the content provider 115 exported the AUA 134 in the first place, and link data 320 indicating a desired

US 6,289,362 B1

7

hypertext link. It will be appreciated that in order for the diary applet 148 to be able to re-export the AUA 156, the diary applet 148 should contain the same or similar transfer scripts as were part of the content provider 115 in transfer script 136 and should be able to display the same or similar request interface as the original content provider 115. It will be further appreciated that the link data 320 may include a link to an object or page which may be on a different site than the content provider site 115.

Other annotations 307 may include a suggested section in which to store the AUA 134 on the diary server 120, a natural size for the object, a description of the object, a privacy level, a type of object indicator, etc. It will be appreciated that the annotations 307 may override HTML default parameters. It will be further appreciated that the AUA 156 on the diary server 154 may have some differences from the corresponding AUA 134 on the content provider 115, such as the removal of the suggested section in which to store the AUA 134 after the AUA 134 has been stored in a section. It will be still further appreciated that the AUA 134 may include a field to indicate whether the AUA 134 is optional or to be presented based on certain criteria. For example, the AUA 134 may include a privacy level indicating that the AUA 134 should not be presented unless the user has the same privacy level or higher. The privacy level may be set by the content provider 115 or may be defined by the user based on a response to a query. As another example, the AUA 134 may include an optional field which enables the user to decide whether the AUA 134 is to be presented. That is, the diary applet 148 may ask, "Do you wish to see a picture of the car to win the latest race?" Presentation of the AUA 134 may be based on the response.

FIG. 4 is a block diagram illustrating details of the diary applet 148, which includes code for generating web pages to present the user diary data 146. The diary applet 148 includes a section manager 405 for retrieving the template 150 (i.e., a presentation context) corresponding to the template ID for a section. It will be appreciated that the section manager 405 enables a user to select a section (e.g., the car section as illustrated in and described with reference to FIGS. 9 and 13 or a section for a given calendar date).

The section manager 405 initiates each of the modules 407 corresponding to the annotations 307 contained in the AUAs 156. That is, the expiration module 410 examines the expiration data 310 to determine if the AUA 156 has expired. If expired, then the expiration module 410 informs the section manager 405 to discard the AUA 156. The re-exportation module 415 examines the re-exportation data 315 to determine if the AUA 156 is to be exportable by a viewer, such as by the viewer system 125. If so, then the re-exportation module 415 sends data and/or code to the section manager 405 to enable re-exportation. The link module 420 examines the link data 320 to determine if any hypertext links are desired. If so, the link address is provided as a hypertext link or as another connection means. The link module 420 accordingly provides data and/or code to the section manager 405. Other modules for handling other annotations, such as natural size, description, privacy level, etc. may also be included.

The section manager 405 compiles the presentation context based on the template 150 and the currently selected section, the universal address parts of the AUAs 156 for the section and the information received from the modules 407 to generate an HTML page definition. The section manager 405 then instructs the browser 142, 158 to present the page corresponding to the page definition to the user. The browser 142, 158 downloads the object information 132 specified by the universal address parts of the AUAs 156.

8

The diary applet 148 optionally may include an AUA generator 425, similar to the AUA generator 140 of FIG. 1 and described in greater detail with reference to FIG. 12. The AUA generator 425 enables a diary owner system 105 to add AUAs that do not originate from the content provider 115 to the user diary data 146. FIG. 14 illustrates a window 1400 enabling a diary owner system 105 to input an object, such as text, an applet, an image, a movie, etc. into the system 105. Window 1400 includes a box 1405 for inputting the address identifying the codebase of the object (e.g., applet), and a box 1410 for inputting an address identifying the object code (e.g., the applet code). Window 1400 further includes box 1415 for inputting a width annotation and a box 1420 for inputting a height annotation. Button 1425 causes the window 1500 for inputting additional annotations of FIG. 15 to pop up. FIG. 15 illustrates a window 1500 enabling a diary owner system 105 to input annotations to be associated with the object added in FIG. 14. Window 1500 includes a box 1505 for inputting additional annotations to the annotated universal address. The diary owner system 105 can then transfer the generated AUA to user diary data 146 in a manner similar to that described herein with reference to the transfer script 136.

FIG. 5 illustrates an example web page 500 provided by a content provider 115 implementing an embodiment of the present invention. In this example, the browser 142 displays the URL address (e.g., <http://somecompany.com>) of the content provider 115 in window portion 505 and displays the content data 130 in window portion 510. The example content data 130 of FIG. 5 includes a car object 515, a car "ADD" button 520, a house object 525 and a house "ADD" button 530. It will be appreciated that this content provider 115 may provide sales information for cars and homes. The diary owner 105 may want to add the car object 515 into the diary, and more particularly to a car section in user diary data 146. The owner is not aware that this will in fact transfer an AUA 134 that corresponds to the car object and that the AUA 134 contains a universal address and one or more annotations. Accordingly, the user via the browser 142 clicks on car ADD button 520, thereby initiating the transfer script 136.

FIG. 6 illustrates a window 600 requesting a diary server 120 address at which to store the requested AUA 134. The window 600 includes an input box 605 for inputting the username of the diary user, and a host box 610 for inputting the network address of the diary server 120. The browser 142, executing the transfer script 136, uses the username and network address to transfer the requested AUAs 134 via the computer network 110 to the diary server 120. Any transfer mechanism may be used.

FIG. 7 is a block diagram illustrating a message packet 700 created by the transfer script 136 for transmission to the diary server 120. The message packet 700 includes the host address received in host box 610, the username 710 received in user box 605, the requested AUA 134 and other data 715 used for network transfer. The browser 142 establishes a communications link with the diary server 120, and forwards the message packet 700 to the diary server 120.

FIG. 8 illustrates a window 800 requesting the section name in which to store the received AUA 134. That is, the transfer applet 151 delivers the message packet 700 from the browser 142 on the diary owner system 105 to a particular AUA database within the user diary store 146. The transfer applet 151 retrieves the section names identifying the sections created for this user, and if requested by the AUA 134 offers the suggested section name as an option. It will be appreciated that, to offer the suggested section, the transfer

applet 151 itself must include a suggested section module (not shown) similar to the modules 307. The suggested section module would determine whether the AUA 134 includes suggested section data and how to handle the suggested section data whether the option is selected or not. The browser 142 and diary software 144 enable the selection of a section. In this example, the browser 142 and transfer applet 151 enable the selection of a previously created car section or a default created today's date section.

FIG. 9 illustrates a page of the car section 900 of user diary data 146. The URL address ("http://diaryserver.com/username") is shown in a window portion 905 and the car section of user diary data 146 is shown in object window 910. In this example, object window 910 displays a first object 915 (which may be the object 515 added from the content provider 115 example of FIG. 5). Object window 910 may include other objects, such as a second object 920 and a third object 925. The second object 920 may be, for example, an object from a blue book provider and the third object 925 may be, for example, an object from a particular car dealer. It will be appreciated that the car section 900 may also display an advertisement (e.g., a cola drink) in an advertisement window portion 930 generated by the template 150. That is, the sponsor of the particular template 150 for this section may have built a link to an advertisement into the template 150.

Generally, the section manager 405 of the diary applet 148 retrieves the selected template 150, which in this case includes a diagonal pattern of object locations. The section manager 405 of the diary applet 148 retrieves the first AUA 156 for the first object location. In this case, the first AUA 156 identifies the car object 515. The expiration module 410 determines that the object has not expired.

Thus, the section manager 405 creates HTML data for instructing the browser 145 to download from the content provider 115 the object information 132 located at the object-specific URL 305. It will be appreciated that the specific image defined by the object information 132 may have changed since the request to add the object to the diary server 120 took place. Accordingly, the content provider 115 can modify each day's, week's, etc. object. This will be appreciated for instance in cases where the object corresponds to an advertisement or a cartoon. The other annotation modules 407 review the annotations 307 contained in the AUA 156, and provide results to the section manager 405. Based on the object information 132, the template 150 (including any permanent or linked advertisements) and the results, the section manager 405 constructs the network-based publishing language (NBPL) page definition such as an HTML page definition containing object-specific URLs 305 for the browser 142 or 158 to use. The diary applet 148 repeats the process for each of the AUAs 156, and stacks them accordingly into the object locations of the template 150. The section manager 405 then instructs the browser 142 to present the page (corresponding to the page definition) to the user. Generating a section window 900 is described in greater detail with reference to FIG. 11.

FIG. 10 is a flowchart illustrating a method 1000 of adding an AUA 134 to the diary server 120. The method 1000 begins with the diary owner system 105 in step 1005 using the browser 142 to establish a communications link with the content provider 115. The content provider 115 in step 1010 uploads the content data 130 to the browser 142, which in step 1015 presents the object. It will be appreciated that the step of presenting may include the step of displaying, the step of performing, the step of manipulating, or like browser action. The diary owner 105 in step 1020

requests the addition of the object to the diary server 120. That is, the user performs an action such as a mouse down event over a button to indicate a desire to add an object link to user diary data 146. The browser 142 in step 1025 recognizes the action and initiates execution of the transfer script 136. The transfer script 136 and transfer applet 151 in step 1030 transfer the AUA 134 to the diary server 120. Step 1030 may include the steps of requesting the diary server 120 address, requesting the user's username, requesting a section name, and transmitting a message packet 700 which includes the diary server address, the username and the AUA 134 to the diary server 120. The transfer applet 151 in step 1035 stores the AUA 134 into the appropriate section of user diary data 146. Step 1035 may include the step of querying the user to select a previously created or preferred section. Method 1000 then ends.

FIG. 11 is a flowchart illustrating a method 1100 of using AUAs 156 to generate diary web pages. Method 1100 begins with the browser 158 on the viewer system 125 in step 1105 establishing a communications link with the diary software 144 on the diary server 120. The diary software 144 of the diary server 120 in step 1110 sends a diary applet 148 and user diary data 146 to the browser 158. The section manager 405 of the diary applet 148, being executed by the browser 158, in step 1115 selects a default "start" section, e.g., the car section. The section manager 405 in step 1120 obtains the template 150 and the AUAs 156 for the current section. FIG. 13 is a block diagram illustrating details of user diary data 146. As shown, the user diary data 146 is divided into user-specific databases, namely, database 1301 for user #1 and other database 1302 for the other users. The database 1301 for user #1 includes a template ID 1310 and an AUA database 1315. The AUA database 1315 includes a car section 1320 which contains AUAs 1335, a sport section 1325 which contains AUAs 1340 and a calendar date section 1330 which contains AUAs 1345. Thus, the section manager 405 can retrieve the appropriate template ID and AUAs easily.

The section manager 405 in step 1125 selects a first AUA 156. Assuming that the AUA 156 has expiration data, the expiration module 410 of the diary applet 148 in step 1130 determines if the AUA 156 has expired. If expired, the expiration module 410 instructs the section manager 405 in step 1160 to discard the AUA 156. Alternatively, the section manager 405 in step 1160 can replace the expired AUA 156 with a new object that does not correspond to the expired AUA 156. Method 1100 then jumps to step 1155. Otherwise, the section manager 405 in step 1135 retrieves the object information 132 specified by the object-specific URL 305 in the AUA 156. The section manager 405 in step 1140 selects a first annotation 307. The section manager 405 in step 1145 instructs the appropriate module 407 to handle the aspect of the object accordingly. For example, if the first annotation 307 identified that re-exportation of the AUA 156 is allowed, then the re-exportation module 415 sends a re-exportation button and a corresponding script to the section manager 405. The section manager 405 in step 1150 determines if the AUA 156 includes another annotation to examine. If so, then method 1100 returns to step 1140. Otherwise, method 1100 proceeds with step 1155.

In step 1155, the section manager 405 determines if there is another AUA 156 to examine in this section. If so, then method 1100 returns to step 1125. Otherwise, the section manager 405 in step 1165 generate page definitions for the section based on the template 150, the universal addresses (URLs) and the annotations (i.e., the results of the examinations performed by the modules 407). Step 1165 further

US 6,289,362 B1

11

includes the step of instructing the browser **142**, **158** to generate web pages based on the page definitions (which includes downloading the objects identified by the universal addresses in the page definitions).

The section manager **405** in step **1170** enables the modification of modifiable AUA parameters (not shown) such as privacy levels. The section manager **405** in step **1175** enables selection of a different section. If the section manager **405** in step **1180** determines that parameters have been modified, then the method **1100** returns to step **1120** to generate the web pages based on the new parameters. Similarly, if the section manager **405** in step **1185** determines that the user has selected a new section, then the method **1100** returns to step **1120** to generate the web pages based on the new section. If nothing has been modified (step **1180**) or selected (step **1185**), then the section manager **405** in step **1190** determines if the user has requested logout. If not, then method **1100** returns to step **1170**. Otherwise, method **1100** ends.

FIG. **12** is a flowchart illustrating a method **1200** for generating an AUA **134** and for placing the AUA **134** and transfer script **136** in a content provider page. Method **1200** begins with the AUA generator **140** in step **1205** setting an object-specific universal address or URL **305** for particular object information **132**. The object information associated with the URL **305** may be an image, text, an applet, a movie, etc. The AUA generator **140** in step **1210** enables the content provider **115** to define annotations **307**, e.g., the expiration data **310**, the re-exportation data **315**, the link data **320**, etc. The AUA generator **140** in step **1215** generates an AUA **134** based on the object-specific URL **305** and the annotations **307**. An example AUA **134** is shown in FIG. **3**.

The AUA generator **140** in step **1220** provides context data in which the object information **132** will reside. For example, if the object information **132** defines a picture of a car, the context data may include text that explains the picture or other context data. The AUA generator **140** in step **1225** generates a AUA button, such as the ADD buttons **520** and **530** illustrated in and described with reference to FIG. **5**. Although method **1100** is being described with reference to buttons, one skilled in the art will recognize that any request interface such as a pull-down menu, keyboard entry, mouse event, etc. may alternatively be used. The AUA generator **140** in step **1230** associates the AUA **135** generated in step **1215** with the AUA button generated in step **1225**. It will be appreciated that one or more AUAs **134** may be associated with an AUA button. The AUA generator **140** in step **1235** generates a content provider HTML data which includes the object information **132**, the URL, the context data and the AUA button. It will be appreciated that, when a user via a browser **142** contacts the content provider **115**, the content provider **115** downloads the content provider HTML data. It will be further appreciated that the browser **142** uses the HTML data to generate a content provider web page, as illustrated in FIG. **5**. Method **1200** then ends.

It should be understood that, although the following example is described in terms of a transfer function for a diary, the transfer function described can be used in any circumstances where a first machine (such as system **106**) sends data (e.g., third party content) to a second machine (such as system **102**), and the data then needs to be send to a third machine (such as system **104**) under control of an applet executing in a browser on the second system. The present invention is contemplated to be of use in non-diary applications, as well as in diary applications.

FIG. **16** shows an overview of a first embodiment of a data transfer function involving three machines. FIG. **17** shows

12

an overview of a second embodiment of a data transfer function, also involving three machines. FIG. **16** will be discussed first. In step **1** of FIG. **16**, the user system **1602** loads the content provider's HTML page from the content provider **1606**. This HTML page includes a function "F" **1607** that can be activated by the user via the HTML page (for example, clicking on a "add" button on the page). The user looks at the content provider's page (as displayed by the browser) and determines whether there is any third party content on the page available for his diary that he wants to add to his diary. If so, the user so indicates. For example, in the described embodiment, the user clicks on an "add" button **520** on the HTML page (see FIG. **5**) associated with the desired third-party content. Clicking on this content activates function "F" **1607** within the displayed web page, as shown in step **2** of FIG. **16**. In the described embodiment, function "F" is in JavaScript, but it can be any appropriate form of executable program.

As shown in step **2** of FIG. **16**, the function "F" pops up a window **1605** that asks the user for his name and for the location of the diary server **1604** (step **3**). Function "F" needs the name/exact location of diary server **1604** so that he can generate HTML page **1608** (step **4**) that requests the transfer applet **1609** from the correct diary server **1604**. (Note that certain embodiments can have more than one diary server **1604**).

In step **4**, the function "F" also generates HTML **1608** that contains:

- 1) activation of a transfer applet (to be loaded from the diary server **1604**) (step **4** and **5**), and
- 2) the parameters of the transfer applet containing all information about the provided content.

Thus, function "F" knows how to generate the HTML to activate the transfer applet (at the host stored by the user) with the parameters of the information to store

In step **5**, function "F" instructs the user **1602**, i.e., the browser thereon, to load the HTML page **1608** in a new HTML-browser window. By loading that page **1608**, the browser will load and execute the transfer applet **1609** on system **1602** (step **6**). When transfer applet **1609** executes, it transfers data to system **1604**. The function "F" uses a priori knowledge about the name/exact location of the transfer applet on diary server **1604**. Similarly, function "F" uses a priori knowledge about the names and semantics of the parameters required by the transfer applet **1609**.

It is important to note that, due to a security restrictions common to many implementations of execution environments of programs such as Java applets, transferring data between three machines (**1602**, **1604**, **1606**) is problematic. Because the data eventually has to be stored on system **1604**, because communication may have been to be set up with the diary applet already running on the system **1602**, and because the diary applet was loaded from system **1604**, the transfer applet **1609** also must be loaded from system **1604**.

The problem is how to get the information describing the content provided to the transfer applet **1609** if the transfer applet is to be loaded from server **1604**. For instance, the transfer applet **1609** is not allowed to connect to the content provider system **1606**. The problem is solved by generating the HTML page **1608**, which contains the instructions that activate the transfer applet **1609** in combination with all information about the content provided that should be handled by the transfer applet **1609**. In other words, the HTML page **1608** is self-contained and the transfer applet **1609** activated by it can handle the transfer without any other communication other than with its source system **1604**, which is allowed since it was loaded from system

1604. Thus, the method shown in FIG. 16 solves the problem caused by the security restraints of the execution environment.

In at least one embodiment, the database is not really transferred immediately, but is only scheduled for storage. A running diary applet performs the actual storage. If there is no running diary applet in the browser on the user system 1602, the transfer applet will start one. Similarly, in at least one embodiment, all applets store to a “store queue.” This way, the transfer applet 1609 can insert a database in the queue that will be processed by another diary applet. Sharing of the new content (as transferred by the transfer applet) with the diary applet is extremely important because the new content will have to be made visible by the diary applet immediately and efficiently, e.g., it would not be acceptable to if it would require a user action in order to view the new content. Similarly, it would not be acceptable if it would require a full “re-upload” of the diary information by the diary applet in order to view the new content. The underlying fundamental mechanism on which the sharing has been based is the sharing of class variables in a single Java virtual machine.

This document includes a JavaScript that performs the function of function “F” of FIG. 17.

FIG. 17 shows an alternate embodiment of a transfer function in which the function “F” does not have a priori knowledge about the name/exact location of the transfer applet 1609. It can be advantageous to have function “F” not know the name/exact location of the transfer applet. Because there are many function “F” s in the network—each content provider 1606 has HTML containing a version of function “F”—it can be problematic if the diary server 1604 decides to change the name of the transfer applet 1609. If each function “F” (which resides on the content provider(s) 1606) knows the name of the transfer applet 1609, each function “F” would have to be changed if the name/location of the transfer applet 1609 is changed. If the function “F” does not know this information, function “F” does not have to change if the name of the transfer applet 1609 stored on system 1604 changes.

In FIG. 17, function “F” (received from system 1606) pops up window 1605 as described above and creates a “network package” 1610 that contains at least:

- the name of the server 1604;
- the name of the user; and
- the properties of the content to be transferred.

Network package 1610 is POSTed to diary server 1604. Diary server 1604 builds the page 1608 using the information in the network package 1610 and returns it to function “F” in system 1602. Function “F” continues as in FIG. 16. Specifically, function “F” instructs the browser thereon to load the HTML page 1608 in a new HTML-browser window. From this point onwards, the embodiment of FIG. 17 behaves as the embodiment of FIG. 16.

It will be appreciated that in this embodiment, the a priori knowledge of function “F” is limited to only the way the network package 1610 is to be structured, the content that is to be put into network package 1610, and the way this package 1610 is to be sent to diary server 1604. The amount of knowledge required is less than the knowledge required to generate page 1610 itself (as it does in the embodiment of FIG. 16).

It will be appreciated that the embodiment of FIG. 17 limits the “outer world” restrictions on the interface of diary server 1604. Once the diary server 1604 is in operation (as illustrated in FIG. 17), it should always support the handling of network packages 1610. However, the internals of page 1608 may be changed by the diary server 1604 whenever such a change is required. Note that such a change is not an option in the embodiment of FIG. 16, since the a priori knowledge about the contents of page 1608 have been spread over numerous content provider systems 1606.

The destination section of each entry in the current transfer may be changed by selecting the entry and then selecting a section. That is, the transfer applet 1609 will pop up a window as shown in FIG. 8 from which the user will be able to select a destination section from the named sections that exist in the diary. Similarly, the user can delete entries that he is not interested in, and move entries to between section. The transfer applet 1609 will add the entries to the AUA-database in the user diary data 122 as requested. In one embodiment, transfer applet 1609 issues a “store” command that is queued in the store queue and checks whether a diary applet is already running. If no diary applet is running, the transfer applet 1609 will start a diary applet automatically.

Following this paragraph is example code, in this case in the JavaScript™ scripting language, of AUAs 134 and the transfer script 136. The example code is intended as part of the Specification. It will be appreciated that each of the four code paragraphs beginning with “W3Content” indicates an AUA.

```
<!DOCTYPE HTML PUBLIC "-//IETF//DTD HTML//EN">
<html>
<head>
<script language="JavaScript">
<!-- don't edit by hand
W3Content__0="" +
'MD1hPXNjYz1odHRwOi8vd3d3LmZlcnJhemkuaXQvY29udGVudC9mMzAwLmpwZ1xc' +
'bmhlaWdodD0xNjcXG53aWR0aD0zMjBcXG5cbmU9bGlual1odHRwOi8vd3d3LmZl' +
'cnJhemkuaXRcXG5ldHlwZT0xXFxuXG4K';
W3Content__1="" +
'MD1hPXNjYz1odHRwOi8vd3d3LmZlcnJhemkuaXQvY29udGVudC9mMzAwX2ZyLmpw' +
'Z1xcbmhlaWdodD0yNDdcXG53aWR0aD00MDBcXG5cbmU9bGlual1odHRwOi8vd3d3' +
'LmZlcnJhemkuaXRcXG5ldHlwZT0xXFxuXG4K';
W3Content__2="" +
'MD1hPXNjYz1odHRwOi8vd3d3LmZlcnJhemkuaXQvY29udGVudC9mMzAwX3RvcC5q' +
'cGdcXG53ZWlnaHQ9MTg4XFxud2lkdGg9NDAwXFxuXG5lPWxpbn9aHR0cDovL3d3' +
'dy5mZXJyYXJpLml0XFxuXZR5cGU9MVxcblxuCG==';
W3Content__3="" +
'Mj1hPXNjYz1odHRwOi8vd3d3LmZlcnJhemkuaXQvY29udGVudC9mMzAwLmpwZ1xc' +
'bmhlaWdodD0xNjcXG53aWR0aD0zMjBcXG5cbmU9bGlual1odHRwOi8vd3d3LmZl' +
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US 6,289,362 B1

15

16

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'cnJhcmkuaXRcXG5ldHlwZT0xXFxuXG4KMT1hPXNyYz1odHRwOi8vd3d3LmZlcnJh' +
'cmkuaXQvY29udGVudC9mMzAwX2ZyLmpwZ1xcbmhlaWdodD0yNDdcXG53aWR0aD00' +
'MDBcXG5cbmU9bGluaz1odHRwOi8vd3d3LmZlcnJhcmkuaXRcXG5ldHlwZT0xXFxu' +
'XG4KMD1hPXNyYz1odHRwOi8vd3d3LmZlcnJhcmkuaXQvY29udGVudC9mMzAwX3Rv' +
'cC5qcGdcXG5oZWlnaHQ9MTg4XFxud2lkdGg9NDAwXFxuXG5lPWxpbn9aHR0cDov' +
'L3d3dy5mZXYyYXJpLml0XFxuZXR5cGU9MVxcblxuCG==';
function loadTransfer(params) {
    loginWin=open("", getWindowName(),
        'width=350,height=130,scrollbars=no');
    content = params;
    setTimeout('writeContent(content)', 1000);
}
function writeContent(content) {
    loginWin.document.open();
    doc = loginWin.document;
    doc.writeln('<HTML><TITLE>Type the location of your W3Diary:</TITLE>');
    doc.writeln('<HEAD>');
    doc.writeln("");
    doc.writeln('<sc' + 'ript language="JavaScript">');
    doc.writeln("");
    doc.writeln('<!-- ');
    doc.writeln("");
    doc.writeln('fu' +
        'nction setCookie(name, value, expires, path, domain, secure) {');
    doc.writeln('    document.cookie = name + "=" + escape (value) + ');
    doc.writeln('        ((expires) ? ";" +
        'expires=" + expires.toGMTString() : "");');
    doc.writeln('        ((path) ? "; path=" + path : "");');
    doc.writeln('        ((domain) ? "; domain=" + domain : "");');
    doc.writeln('        ((secure) ? "; secure=" : "");');
    doc.writeln('    }');
    doc.writeln("");
    doc.writeln('fu' + 'nction getCookie(name) {');
    doc.writeln('    va' + 'r arg = name + "=";');
    doc.writeln('    va' + 'r alen = arg.length;');
    doc.writeln('    va' + 'r clen = document.cookie.length;');
    doc.writeln('    va' + 'r i = 0;');
    doc.writeln('    while (i < clen) {');
    doc.writeln('        va' + 'r j = i + alen;');
    doc.writeln('        if (document.cookie.substring(i, j) == arg) {');
    doc.writeln('            va' +
        'r endstr = document.cookie.indexOf(";", j);');
    doc.writeln('            if (endstr == -1) {');
    doc.writeln('                endstr = document.cookie.length;');
    doc.writeln('            }');
    doc.writeln('            re' +
        'turn unescape(document.cookie.substring(j, endstr));');
    doc.writeln('        }');
    doc.writeln('        i = document.cookie.indexOf(" ", i) + 1;');
    doc.writeln('        if (i == 0) break;');
    doc.writeln('    }');
    doc.writeln('    re' + 'turn ""');
    doc.writeln('    }');
    doc.writeln("");
    doc.writeln('fu' + 'nction addContent() {');
    doc.writeln('    va' + 'r expire = new Date();');
    doc.writeln('    va' +
        'r oneDay = expire.getTime() + (24 * 60 * 60 * 1000);');
    doc.writeln('    expire.setTime(oneDay);');
    doc.writeln('    setCookie("w3duser", ' +
        'document.nhf.user.value, expire);');
    doc.writeln('    setCookie("w3dhost", ' +
        'document.nhf.host.value, expire);');
    doc.writeln('    document.nhf.action="http://" + ' +
        'document.nhf.host.value + ' +
        '"/transfer/" + document.nhf.user.value;');
    doc.writeln('    // document.nhf.submit();');
    doc.writeln("");
    doc.writeln('    loginWin=open("", "" +
        'getWindowName() +
        '"', 'width=350,height=130,scrollbars=no');');
    doc.writeln('    setTimeout(\'writeContent()\', 1000);');
    doc.writeln('    }');
    doc.writeln("");
    doc.writeln('fu' + 'nction writeContent() {');
    doc.writeln('    loginWin.document.open();');
    doc.writeln('    doc = loginWin.document;');
    doc.writeln('    doc.writeln('<HTML>');');
    doc.writeln('    doc.writeln('<BODY onLoad="document.nw.submit() ">');');

```

A000138

US 6,289,362 B1

17

18

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doc.writeln('doc.writeln('<FORM method="POST" name="nw" action="' +
' + document.nhf.action+ \">');');
doc.writeln(' doc.writeln('<INPUT type=hidden name="user"
value=""
+ ' + document.nhf.user.value+ \">');');
doc.writeln(' doc.writeln('<INPUT type=hidden name="host"
value=""
+ ' + document.nhf.host.value+ \">');');
doc.writeln(' doc.writeln('<INPUT type=hidden name="content" +
' value="' + document.nhf.content.value+ \">');');
doc.writeln(' doc.writeln('</FORM>');');
doc.writeln(' doc.writeln('</BODY>');');
doc.writeln(' doc.writeln('</HTML>');');
doc.writeln(' doc.close();');
doc.writeln(' window.close();');
doc.writeln('');
doc.writeln('');
doc.writeln('fu' + 'nction initFields() {');
doc.writeln(' document.nhf.user.value=getCookie("w3duser");');
doc.writeln(' document.nhf.host.value=getCookie("w3dhost");');
doc.writeln('');
doc.writeln('');
doc.writeln('// -->');
doc.writeln('');
doc.writeln('</sc' + 'ript>');
doc.writeln('');
doc.writeln('</HEAD>');
doc.writeln('');
doc.writeln('<BODY bgcolor="#FFFFFF" onLoad="initFields()">');
doc.writeln('');
doc.writeln('<FORM method="POST" name="nhf">');
doc.writeln('<TABLE border=0><TR><TD> user:');
doc.writeln('<TD COLSPAN=2 align=right>');
doc.writeln('<INPUT size=30 name="user"><BR>');
doc.writeln('<TR><TD> host: </TD>');
doc.writeln('<TD COLSPAN=2 align=right>');
doc.writeln('<INPUT size=30 name="host"><BR>');
doc.writeln('<TR><TD></TD></TD>');
doc.writeln('<INPUT type=button value="Add Content" +
' onClick="addContent()">');
doc.writeln('</TD><TD align=right>');
doc.writeln('<INPUT type=button value="Cancel" +
' onClick="window.close()">');
doc.writeln('</TD></TR></TABLE>');
doc.writeln('<INPUT type=hidden name="content" value="" +
content+ " ">');
doc.writeln('</FORM>');
doc.writeln('');
doc.writeln('</BODY>');
doc.writeln('</HTML>');
doc.close();
}
function getWindowName() {
wName = " + Math.random();
return 'W3Diary_' + wName.substring(wName.indexOf('.') + 1);
}
// -->
</script>
<meta http-equiv="Content-Type"
content="text/html; charset=iso-8859-1">
<meta name="GENERATOR" content="Microsoft FrontPage 2.0">
<title>CompanyAari Content</title>
</head>
<body bgcolor="#FFFFFF" text="#000000" link="#C70000"
vlink="#C70000" alink="#C70000">
<p align="center"> </p>
<div align="center"><center>
<table border="0" cellpadding="0" cellspacing="5">
<tr>
<td align="center" width="50%">The new 1998 CompanyA product<p>
<a href = "JavaScript:loadTransfer(W3Content_0)"
onMouseOver="status='Click to add W3Diary Content';return true;">
</a></p>
</td>
<td width="50%"></td>

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A000139

-continued

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</tr>
<tr>
  <td align="center" width="50%">The new 1998 CompanyA product<p>
    <a href = "JavaScript:loadTransfer(W3Content_1)"
    onMouseOver="status=Click to add W3Diary Content';return true;"></a></p>
  </td>
  <td width="50%"></td>
</tr>
<tr>
  <td align="center" width="50%">The new 1998 CompanyA product<p>
    <a href = "JavaScript:loadTransfer(W3Content_2)"
    onMouseOver="status=Click to add W3Diary Content';return true;"></a></p>
  </td>
  <td width="50%"></td>
</tr>
</table>
<p>
Or get them <a href="JavaScript:loadTransfer(W3Content_3)"
onMouseOver="status=Click to add W3Diary Content';return true;">all three</a>
</center></div>
</body>
</html>
```

The foregoing description of the preferred embodiments of the present invention is by way of example only, and other variations and modifications of the above-described embodiments and methods are possible in light of the foregoing teaching. For example, although the embodiments herein have been described with reference to a diary-type system, any system for maintaining an ordered set of object locations, annotations and presentation contexts can alternatively be used. Although the network sites are being described as separate and distinct sites, one skilled in the art will recognize that these sites may be a part of an integral site, may each include portions of multiple sites, or may include combinations of single and multiple sites. Further, components of this invention may be implemented using a programmed general purpose digital computer, using application specific integrated circuits, or using a network of interconnected conventional components and circuits. Connections may be wired, wireless, modem, etc. The embodiments described herein are not intended to be exhaustive or limiting. The present invention is limited only by the following claims.

What is claimed is:

- 1. A computer-based method, comprising the steps of:
receiving from a client a request for access to a content object;
responsive to the request of the client, identifying an annotated universal address (AUA) having a universal address identifying a location of the content object and having an annotation authored by a content provider for controlling an aspect of a presentation of the object, the AUA being present in an AUA database containing one AUA;
responsive to the request of the client, identifying a presentation context for controlling ion behavior of the object; and
transmitting to the client the presentation context, the AUA and an applet for dynamically generating a page definition for the presentation of the object, the page definition being generated from the presentation context and the AUA.

- 2. A computer system comprising:
a first memory storing at least one presentation context;
a second memory storing an annotated universal address (AUA) database, which includes at least one AUA having a universal address identifying a location of a content object and an annotation authored by a content provider for controlling an aspect of a presentation of the object, the second memory being coupled to the first memory;
a third memory storing at least one applet for dynamically generating a page definition for the presentation of the object, from a presentation context and an AUA, the third memory being coupled to the second memory;
a reception module, for receiving a request for access to a content object from a client, the reception module being coupled to the first memory and to the second memory;
an identification module, for identifying, in response to the request from the client, a presentation context and an AUA, for controlling presentation behavior of the object, the identification module being coupled to the first memory, to the second memory, and to the reception module; and
a transmission module, for transmitting the presentation context, the AUA and the applet to the client for dynamically generating a page definition for the presentation of the object, the page definition being generated from the presentation context and the AUA, the transmission module being coupled to the reception module.
- 3. A computer-based method, comprising the steps of:
transmitting a request to access a content object;
responsive to the request, receiving, an annotated universal address (AUA) having a universal address identifying a location of the content object and including an annotation authored by a content provider for controlling an aspect of a presentation of the object;
responsive to the request, receiving a presentation context for controlling presentation behavior of the object;
dynamically generating a page definition for the presentation of the object, using the presentation context and the AUA; and
retrieving the object specified by the universal address.

US 6,289,362 B1

21

4. A computer-based method, comprising the steps of:
 assigning a universal address to a location of a content object;
 generating an annotation by a content provider for controlling an aspect of a presentation of the object;
 associating the universal address with the annotation generated by a content provider to generate an annotated universal address;
 associating a request interface with the annotated universal address;
 generating network data for dynamically presenting the object and the request interface; and
 enabling transfer of the annotated universal address upon receiving an indication at the request interface.

5. A computer system comprising:
 an assignment module for assigning a universal address to a location of a content object;
 an annotation module for generating an annotation by a content provider for controlling an aspect of a presentation of the object, the annotation module being coupled to the assignment module;
 an association module for associating the universal address with the annotation generated by a content provider to generate an annotated universal address, and for associating a request interface with the annotated universal address, the association module being coupled to the annotation module;
 a presentation generation module, for generating network data for dynamically presenting the object and the request interface, the presentation generation module being coupled to the association module; and
 a transfer module for enabling transfer of the annotated universal address upon receiving an indication at the request interface.

6. A computer-based method, comprising the steps of:
 requesting addition of an annotated universal address (AUA) to an AUA database from which personalized web pages are constructed, the database being on a server, the AUA identifying a location of a content object and including an annotation authored by a content provider for controlling an aspect of a presentation of the object;
 receiving a transfer script in response to the request;
 initiating execution of the transfer script to request a transfer applet from the server; and
 initiating execution of the transfer applet to transfer the AUA to the AUA database on the server.

7. A computer system comprising:
 third party memory storing a transfer script that generates a request for a transfer applet from server memory;
 server memory storing an AUA database from which personalized web pages are constructed and a transfer applet for establishing a communications link between a client browser and the server memory; and
 a client browser coupled to the third party memory and to the server memory for executing the transfer script and the transfer applet to transfer an AUA to an AUA database stored in the server memory, the AUA identifying a location of a content object and including an annotation authored by a content provider for controlling an aspect of a presentation of the object.

8. The method of claim 1 wherein the annotation further comprises:
 at least one content provider authored restriction concerning subsequent presentation of the object.

22

9. The system of claim 2 wherein the annotation further comprises:
 at least one content provider authored restriction concerning subsequent presentation of the object.

10. The method of claim 3 wherein the annotation further comprises:
 at least one content provider authored restriction concerning subsequent presentation of the object.

11. The method of claim 3 wherein the page definition further comprises:
 a definition of a personalized diary page.

12. The method of claim 4 wherein the annotation further comprises:
 at least one content provider authored restriction concerning subsequent presentation of the object.

13. The system of claim 5 wherein the annotation further comprises:
 at least one content provider authored restriction concerning subsequent presentation of the object.

14. The method of claim 6 wherein each personalized web page further comprises:
 a user personalized diary page.

15. The method of claim 6 wherein each AUA further comprises:
 an address for locating an object; and
 at least one content provider authored annotation for controlling at least one aspect of the object.

16. The method of claim 15 wherein the annotation further comprises:
 at least one content provider authored restriction concerning subsequent presentation of the object.

17. The system of claim 7 wherein each personalized web page further comprises:
 a user personalized diary page.

18. The system of claim 7 wherein each AUA further comprises:
 an address for locating an object; and
 at least one content provider authored annotation for controlling at least one aspect of the object.

19. The system of claim 18 wherein the annotation further comprises:
 at least one content provider authored restriction concerning subsequent presentation of the object.

20. A computer program product, on a computer readable medium, the computer program product comprising:
 program code for receiving from a client a request for access to a content object;
 program code for identifying, responsive to the request of the client, an annotated universal address (AUA) having a universal address identifying a location of the content object and having an annotation authored by a content provider for controlling an aspect of a presentation of the object, the AUA being present in an AUA database containing at least one AUA;
 program code for identifying, responsive to the request of the client, a presentation context for controlling presentation behavior of the object; and
 program code for transmitting to the client the presentation context, the AUA and an applet for dynamically generating a page definition for the presentation of the object, the page definition being generated from the presentation context and the AUA.

21. A computer program product, on a computer readable medium, the computer program product comprising:

A000141

US 6,289,362 B1

23

program code for transmitting a request to access a content object;

program code for receiving, responsive to the request, an annotated universal address (AUA) having a universal address identifying a location of the content object and including an annotation authored by a content provider for controlling an aspect of a presentation of the object;

program code for receiving, responsive to the request, a presentation context for controlling presentation behavior of the object;

program code for dynamically generating a page definition for the presentation of the object, using the presentation context and the AUA; and

program code for retrieving the object specified by the universal address.

22. A computer program product, on a computer readable medium, the computer program product comprising:

program code for assigning a universal address to a location of a content object;

program code for generating an annotation by a content provider for controlling an aspect of a presentation of the object;

program code for associating the universal address with the annotation generated by a content provider to generate an annotated universal address;

program code for associating a request interface with the annotated universal address;

24

program code for generating network data for dynamically presenting the object and the request interface; and

program code for enabling transfer of the annotated universal address upon receiving an indication at the request interface.

23. A computer program product, on a computer readable medium, the computer program product comprising:

program code for requesting addition of an annotated universal address (AUA) to an AUA database from which personalized web pages are constructed, the database being on a server, the AUA identifying a location of a content object and including an annotation authored by a content provider for controlling an aspect of a presentation of the object; program code for receiving a transfer script in response to the request;

program code for initiating execution of the transfer script to request a transfer applet from the server; and

program code for initiating execution of the transfer applet to transfer the AUA to the AUA database on the server.

24. The method of claim 3 further comprising: presenting the content object according to the page definition.

* * * * *

UNITED STATES PATENT AND TRADEMARK OFFICE
CERTIFICATE OF CORRECTION

PATENT NO. : 6,289,362 B1
DATED : September 11, 2001
INVENTOR(S) : Joannes Jozef Everardus van der Meer

Page 1 of 1

It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

Column 19,

Line 57, add -- at least -- after the word "containing".

Line 60, delete "ion" and replace with -- presentation --.

Signed and Sealed this

Twenty-eighth Day of May, 2002

Attest:

A handwritten signature in black ink, appearing to read "James E. Rogan", with a long horizontal flourish extending from the bottom of the signature.

Attesting Officer

JAMES E. ROGAN
Director of the United States Patent and Trademark Office

CERTIFICATE OF SERVICE

I certify that I electronically filed the foregoing with the Clerk of the Court for the United States Court of Appeals for the Federal Circuit by using the appellate CM/ECF system on February 3, 2015.

OPENING BRIEF FOR REMBRANDT SOCIAL MEDIA, LP

I further certify that counsel of record are registered as CM/ECF users and will be served by the appellate CM/ECF system and via email.

February 3, 2015

/s/ John Dragseth
John Dragseth

CERTIFICATE OF COMPLIANCE

The Brief for Plaintiff-Appellant complies with the type-volume limitation set forth in FRAP 32(a)(7)(B). The relevant portions of the Brief, including all footnotes, contain 13,996 words, as determined by Microsoft Word® 2013.

/s/ John Dragseth
John Dragseth